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THE MANAGEMENT OF THE PSYCHONEUROSES.*

By R. FINLEY GAYLE, JR., M. D., Richmond, Va.
Associate Professor of Nervous and Mental Diseases, Medical College of Virginia.

A physician is seldom called to see a sick person in whom the psychologic aspect of disease is not an important factor. It is a well established fact among those dealing with nervous and mental diseases that every sickness has a functional nervous element. It, therefore, behooves all physicians and surgeons to be alert for the psychogenic factor in all diseases. It is often not so much the application of your scientific knowledge nor the careful administration of drug therapy which benefits many of your patients as it is the artistic manner in which you inspire confidence, and mentally guide your sick charge in an understanding and sympathetic manner.

Diagnoses of indigestion, biliousness, neuralgia, rheumatism, neuritis and similar ones are often made without sufficient objective signs to warrant any diagnosis of organic disease. We wish to satisfy our patients and give a name to a group of symptoms of which they complain and for which they have consulted us. It often angers patients to tell them that they are simply "nervous" and that their symptoms are due to some mental conflict or maladjustment which they are unable to compensate for. It is in these cases that the artful physician succeeds in gaining the confidence of his patients, and by a skillful management of this individual afflicted with a functional nervous disorder he is able to tactfully handle the situation and explain in a scientific, psychological manner just what the causes of the patient's complaints are so that the patient is often just as willing to accept a functional nervous diagnosis as he is one of a definite organic disease. Regardless of whether there are a sufficient number of objective signs to warrant a diagnosis of physical disease the mental element is a factor which must be met even in organic disease, and one with which every physician and surgeon must cope in the case of practically all patients coming under his professional care. It is quite probable that an individual may be suffering with two separate and distinct diseases at the same time. An individual with a psychopathic background and a good deal of emotional instability may go along fairly well adjusting himself to the vicissitudes of life until he is stricken with even a mild case of influenza or some other infection or trauma, and immediately a profound psychoneurosis is lighted up. There are many instances which may illustrate the point, one being the hysterical woman at childbirth. We cannot overlook the care of her psychoneurotic state if we are going to be successful in handling her pregnancy. Good physicians and surgeons always treat the mental side of their patients, often without being conscious of it.

The psychoneuroses which are not associated with organic disease and which are purely of psychogenic origin are possibly the most difficult to handle. Here we are unable to tell the individual that his nervous symptoms are dependent upon some underlying physical cause. Temerity must be exhibited, for it is seldom that a sick person is flattered by being told that his or her symptoms are dependent upon some abnormal mental process. Women suffering with major hysteria are often driven into a frenzy when told that their condition is hysterical. They often know too well the correctness of the diagnosis and thereby resent it, because they hate to face the truth. The psychoneurotic likes to "hang his nervous hat on a physical peg."

To be able to assist in the recovery of a strictly functional nervous case it is necessary to find out just why the patient is thinking badly about himself, and by so doing you will be able to help him adjust himself to his situation by making him substitute good thinking for bad thinking. So often individuals suffering with various types of the psychoneuroses are unconsciously aware of the underlying psychogenic factor in their disease,

*Read at the sixty-first annual meeting of the Medical Society of Virginia. in Norfolk, October 21-23, 1930.
In Dr. Gayle's absence this paper was read by Dr. F. W. Upshur.

and this must be brought into the conscious mind by the various forms of psychoanalysis. When the psychic cause of the patient's symptoms which has been repressed into the subconscious mind is demonstrated to the patient by bringing it into his consciousness, he can frequently see the situation in its true light and he is often promptly benefited.

It is difficult to make a classification of the psychoneuroses because there are practically as many classifications as there are neurologists who write about them. I shall attempt to classify the psychoneuroses in my own way, employing in the main the classification used in the U. S. Army at the War Neurosis Hospital at LaFoche, France. In this classification, the main groups are usually divided into one or two subdivisions. For instance, hysteria is classified as major and minor. The major types consist of those in which there is a very evident gross subconscious simulation of disease; the amnesias, the paralyses (both motor and sensory), the convulsive states, deafness, blindness, dumbness, and stuttering are examples. The minor group consists mainly of those conditions in which functional pain, various sensory disturbances of the skin, and somatic complaints are prominent. These hysterical states are usually dependent upon some unpleasant situation from which the individual desires to escape, and he, therefore, subconsciously simulates disease. It has been said that the difference between hysteria and malingering is that in the former there is a subconscious simulation of disease, whereas in the latter the simulation is conscious. At the front, in France, during the War an emotionally unstable soldier, who was not a coward, but who unconsciously feared mutilation, permanent disability, disfiguration and other things, would become so unstabilized from a psychic standpoint as to develop symptoms of organic physical disease, such as blindness, paralyses, deafness, and others. These men were just as truly ill as though the organ having to do with the function of the part affected was destroyed by wounds. The same situation pertains to civil psychoneuroses of the hysterical group. An unattractive young woman who does not get as much attention as her sister will subconsciously simulate disease in an endeavor to gain that which she most desires.

Neurasthenia may be properly classed as a psychoneurosis, but it is a very rare type of disease in spite of the frequency with which the diagnosis is made. Most of the so-called neurasthenics belong to the manic-depressive psychotic group of mental diseases or to the anxiety psychoneurosis or hysterical group. Neurasthenia is a very clear-cut disease in which the symptom-complex is simple. The outstanding features of the disease are, as the name signifies, nerve weakness. Persons suffering with neurasthenia simply tire easily, both mentally and physically. They are emotionally unstable, and have as a background no evidence of physical disease. They suffer intensely and are probably the most difficult type in which a good result may be expected. Another type of functional nervous disease is the anxiety psychoneurosis, which is characterized mainly by a state of mental anxiety and unrest. Various vague pains scattered over the body which are obviously of psychic origin are present. The chief mental symptom is a disturbance of the emotional tone, particularly of anxiety, depression, and apprehension. The patients are afraid of everything, they fear opening letters lest their contents contain bad news; they are fearful for the safety of their loved ones; they fear disease; their outlook is gloomy concerning their own sickness; insomnia is a common symptom and they have various complaints, such as vertigo, dizziness, and others. The foregoing are the three main groups of the psychoneuroses, but along with this grouping must be included the traumatic psychoneurosis which may take on either of the above mentioned types, and there is also the compensation phase which is connected with industrial cases and automobile accidents. There are two other types of the psychoneuroses which rightfully belong in this group but which are seldom included, namely, psychasthenia and hypochondriasis. In their incipiency these two clinical entities are not psychotic, but they frequently progress to that degree of mental illness. Psychasthenia is characterized by morbid fears and the hypochondriac is the individual who is thought to be "hipped" about himself. It is sometimes difficult to separate the early hypochondriac from certain types of hysteria. Symptoms which all psychoneuroses have in common are insomnia, emotional instability, a conscious lack of insight into their condition, motor and sensory disturbances of psychic origin, and social inadaptability.

Even though a psychoneurosis is properly diagnosed early by a competent physician and conditions for the care of the patient are ideal, the duration of the illness is in doubt. Practically all of these conditions will, however, recover in time. It is, therefore, important that the patient be given every advantage, as early as possible, if we are to expect a prompt recovery. So many factors enter into the course of the disease that any person venturing a guess as to its duration is either guessing or has had little experience in the handling of these cases. No patient should be treated for anything until a thorough investigation as to the cause of the disease has been made. This is particularly true where a psychoneurosis is suspected of being the major disease, for the reason that an underlying physical factor as the real cause may be overlooked. It is dangerous to make a diagnosis of hysteria simply because a patient appears hysterical or neurasthenic. Aside from a thorough investigation from a physical and laboratory standpoint, a mental study should be made in an endeavor to uncover a psychogenic element in the disease. Until a thorough understanding of the patient's personality make-up is gained by the physician, it is impossible to determine scientifically just what type of therapy should be instituted and just where the patient can best be handled.

The term psychoanalysis frightens most physicians as being too formidable, and one which has solely to do with the investigations of one's abnormal sex life. This is not a fact as the term is understood by the average American neurologist. Psychoanalysis to me simply means the unburdening of the patient's innermost thoughts concerning his past and present life. It is, in a sense, mental purgation. It is a fact that if an individual is confronted by things to which he is unable to make a mental adjustment, he represses these thoughts into his subconcious mind until, sooner or later, he is no longer able to dodge the result of such unhealthy mental thinking. His thoughts become stagnated, and he becomes "mentally toxic" and needs "mental purgation." The further along an individual goes in unburdening his thoughts to a physician the easier it becomes to him and the more facts of importance he is able to dig out of his subconscious mind. He gets into the spirit of the thing, and, whereas at first it is difficult and hard work to uncover facts to which the patient has not adjusted himself, he soon rather enjoys coming to you for an interview, and becomes so verbose about himself that it is often difficult to stop him. It is like a ball going down hill, the further it goes the faster it goes. It is impossible for any physician to attempt to do a psychoanalysis in a short period of time. An analysis worthy of its name requires considerable time, because it is seldom that any patient is willing to give up the secrets of his soul to a stranger until after he has gained complete confidence in the physician. All of the psychoneuroses have as a basis some mental maladjustment which is either in the patient's conscious or subconscious mind, and the duty, therefore, of the neurologist or physician attempting to do the psychoanalysis is to delve into the patient's mind sufficiently far back to uncover and bring to the surface the condition to which the patient has not adjusted himself, and thereby help him in compensating for it. So often these patients are simply slapped on the back, told that they are nervous, given a bromide, sent out with a hearty goodbye, saying "You'll be well soon." Such treatment never helps a psychoneurotic. It often angers them and because of such treatment in the hands of one physician they are loathe to consult another.

It is seldom necessary in the incipiency of a psychoneurosis, unless the illness is very sudden and profound, to advise any sort of hospital or institutional treatment, for the reason that the great proportion of them can be successfully handled in one's office or in the home, thereby saving the loss of time to the individual from his work and the expense incident to institutionalization. It is impossible to successfully handle some of the functionally nervous cases either in the office or the home, even though they have been given a fair trial over a sufficient length of time, and it, therefore, becomes necessary to hospitalize them. It is absolutely essential at times to completely disassociate the individual from his normal environment, to put him entirely with strangers, to give him no contacts with his friends or family, and by means of mental as well as physical rest, together with other measures which will be discussed later, to give him the complete mental and physical relaxation which he must have before recovery is to be expected. It is then necessary to keep this type of case

at complete rest and quiet, where the patient can be properly fed, properly medicated, properly nursed and given physiotherapy and occupational therapy by those skilled in this form of treatment. Hydrotherapy can be successfully given even though the Baruch or Turkish system of baths is not available.

Certain psychoneurotics do not respond either to the office, the home, or the usual hospital treatment, and these have to be put in institutions because their condition progresses beyond the state of psychoneurosis into that of psychosis. It is then necessary to transfer them to mental institutions for their proper care.

The psychoneuroses are strictly diseases of the mind, and only mental measures will cure them. Some of them, mild cases, have no doubt cured theselves, have been benefited by Christian Science, by osteopathy, by chiropractic, or by the administrations of a tonic by the physician after being told that they have some minor physical ailment. It is probable when recovery by these measures is affected that it is accomplished more by the suggestive effect of the medicine than by any specific therapeutic action of the drug, and more by the psychological suggestion of practitioners of the cult than by the virtue of their respective therapy. The mental effect of daily visits by the physician to the patient or by the patient to the physician must not be forgotten. It is almost impossible to get the proper contact with a patient suffering with functional nervous disease by seeing him once every two or three weeks or once a month. A pleasing personality is particularly helpful in the handling of a psychoneurotic. Unless the physician has some magnetism, a good deal of tact, much diplomacy, and a cheerful personality, he is going to have difficulty in getting the proper hold on his psychoneurotics. Many years ago, Dr. Weir Mitchell, of Philadelphia, prescribed a treatment which today bears his name and is known as the "Weir Mitchell rest treatment." It is unnecessary to go into the details of that treatment except to say that the treatment, as Weir Mitchell prescribed it originally, is seldom carried out today. It is modified by almost everyone who practices neurology. Even Dr. Mitchell recognized the large part which suggestion played in his method of treatment, and it is probably a fact that the reason Dr. Mitchell got so many recoveries by his method was not so much the method as it was Weir Mitchell's magnetic personality.

A complete and absolute understanding of the patient's personality, together with a thorough knowledge of the patient's mental reaction to situations, and a familiarity with the patient's mental background and his many conflicts and maladjustments is absolutely necessary in the handling of these cases. The patient's musculature should be kept in good condition by the use of general massage. This should be begun lightly and should be gradually extended. Half an hour of general massage corresponds to a considerable amount of exercise. It has been said that massage for that length of time is the equivalent of a two mile walk. If it is impossible to have at hand an approved therapeutic system of baths, hydrotherapy may be given in the home or in any hospital. Warm or hot baths may be given for sedation or sleep before retiring, and are often beneficial in the insomnia phase of the disease. Hot packs are also useful in the treatment of insomnia and other symptoms of the psychoneuroses. In the morning hydrotherapy may be given in the form of a warm bath followed by a cold douche to the spine, by ice being applied for several minutes up and down the spine, and by cold water being run over the back through a hose or wrung from a sponge or towel. Cold drip sheets are stimulative; the cold shower and the needle bath have their places. Medicines are certainly helpful in the treatment of the psychoneuroses as sedatives, hypnotics, and stimulants. Mild sedatives to help the patient relax in the daytime are just as essential in the treatment of this disease as is building up the blood in the treatment of anemia. A sedative or hypnotic is simply a crutch or a support for the individual to lean on while his nervous system is being stabilized. Rest being the first physiologic principle in the treatment of any disease, it is just as essential to quiet the nervous system when it is functionally disturbed as it is to put a fractured femur at rest by immobilization. Mild barbiturates, bromides, and other similar drugs are used in the treatment of this group of cases, and they are harmless if they are judiciously prescribed. Mild hypnotics at night for sleep are essential in the handling of these cases, as it is much less harmful to the individual to take

a few grains of a simple hypnotic than it is for him to have a restless night, getting up the next morning mentally tense and worn out because of lack of sleep. Occupational therapy is decidedly useful in the treatment of these cases. This form of treatment is more than simple basket making, rug weaving, clay modeling, and things of that nature done in mental institutions. When occupational therapy is prescribed for certain types of patients they immediately become resentful, because they think of this type of therapy as being used only in institutions for the insane. Anything which keeps the patient physically and mentally occupied and helps him in getting away from the habit of thinking about himself is occupational therapy. Golf, horseback riding, cross word puzzles, card games, and in fact, anything which diverts the patient is helpful as an occupational therapeutic aid in the handling of these cases.

It is unfortunate that the average young man going through medical school is uninterested in the functional side of neurology and psychiatry. I say without fear of contradiction that it is one of the most important branches of all medicine and surgery, for without a knowledge of and an ability to handle the functionally nervous and mentally sick no physician is going to succeed to the degree that he otherwise would. It is often that a physician instinctively and inherently is able to handle his sick charges without a conscious knowledge that he is applying psychotherapeutic measures, but most men who successfully practice the art must learn it by training and hard work and much experience. The psychoneurotic forms probably our largest group of disease, and is an economic as well as a medical problem. By the proper care and treatment of developed cases, by educational measures in the schools, and by the dissemination of knowledge of mental hygiene throughout the profession as well as to the laity, we are going to be able some day to reduce to a considerable degree the number of psychoneurotics in our midst.

Professional Building.

DISCUSSION

DR. JAMES ASA SHIELD, Richmond: I enjoyed very much hearing Dr. Upshur read Dr. Gayle's paper on psychoneurotic states. I think a very important thing, also, in handling this kind of case is, after they are apparently well, have them come back to see you, first, in a couple of months, then later every four months and six months, because it is very important for these people to get whatever disturbing thought and worry they have off their chests; it is a real cathartic. After a period of observation and adjustment, you can then dismiss them; but it is very important, after your intensive treatment, to have them come back at intervals.

AN ANALYSIS OF 207 CONSECUTIVE OPERATIONS UPON PATIENTS SUFFERING WITH THYROID DISEASE.*

By J. MOREHEAD EMMETT, M. D., Clifton Forge, Va.

Until I attempted to correlate the clinical findings, as tabulated on our records, I did not realize how many essential features were omitted from the average chart. The explanation for these omissions may be found in the fact that these records were made by house doctors who were taught in the various schools of medicine and who came to us without any common information about the classification of thyroid disease. For practical purposes, however, we were able to gather together some essential facts which we feel may be of interest to you.

Males	77
Females	130
Total	207

	Cured	*Imp.*	*Unimp.*	*Died*	*Total*
Endemic Group:					
(Simple Adenomas)	36	2	--	1	39
(Toxic Adenomas)	116	22	1	1	140
Exophthalmic	25	--	--	1	26
Strumitis	1	--	--	1	2
	178	24	1	4	207

Simple Adenomas: Male, 12; female, 27; total, 39. Youngest, 13 years; eldest, 62 years; average age, 35.

Toxic Adenomas: Male, 49; female, 91; total, 140. Youngest, 18 years; eldest, 70 years; average age, 36.3. Average metabolic rate, 38.6. Average duration of symptoms, 5.3 years. Average preparatory days, 10.5. Auricular fibrillations, 32. Thyro-Cardiacs, 23. Two-stage operations, 3. Recurrent, 2.

Exophthalmic: Male, 12; female, 14; total, 26. Youngest, 17 years; eldest, 62 years; average age 39 3. Average metabolic rate, 48.3. Average duration of symptoms, 5 months. Average preparatory days, 15.4. Auricular fibrillations, 7; Thyro-Cardiacs, 4. Two-stage operations, 1. Recurrent, 2.

Strumitis: Male, 2; female, 0; total, 2. Youngest, 40 years; eldest, 48 years.

Many definite contributions have been made to the question of thyroid disease in the past few years. In fact, probably greater accomplishments have been registered within the last

*Read at the sixty-first annual meeting of the Medical Society of Virginia, in Norfolk, October 21-23, 1930.

ten years than during any previous twenty-five year period. As yet, we are not agreed upon every elementary factor concerned in the question of thyroid imbalance, but the basic principles are satisfactorily understood by men doing thyroid surgery.

During very recent years there has been a vast change in the reaction of the medical profession towards this particular disease. The earlier state of indifference, based upon the belief that surgery of the thyroid gland should be handled by a small group of specialists, has been modified by a widespread interest on the part of a large number of men who are acquiring more accurate knowledge of this disease and its treatment. This new interest and general dissemination of information about thyroid disease has proven a valuable asset in solving some of the hidden problems about this disease, especially as it relates to endemic goiter, its geological frequency, and recent investigators have emphasized that early diagnosis and prompt treatment play an important part in the mortality and end-results of surgical treatment.

An explanation for the retarded clinical progress in the treatment of thyroid disease may be found in our failure to adopt some universal working nomenclature or classification. For all practical purposes, it seems that Plummer's recent suggestion concerning thyroid classification fulfills adequately this problem. First, endemic goiter, which is further divided into colloidal, adenomatous non-toxic, and adenomatous toxic; second, exophthalmic; third, tuberculosis, malignancy, strumitis, etc. The great obstacle to the universal acceptance of this classification is due to the conflicting opinions. One group of men still maintains that a toxic adenoma is but a degenerative stage of an exophthalmic goiter. Those of us whose practice largely comes from the mountainous country see very definitely two distinctive types of toxic thyroid patients, and, although they present many symptoms which are common to both groups, they are still easily differentiated by their histories, by the progress of the disease, by the clinical findings, by physical examination, and by their relative response to recognized preparatory treatment.

It is generally agreed that endemic or simple goiter is most prevalent in the mountainous country where the available iodine content is lowest. Consequently, as might be anticipated, the group of so-called adenomatous goiters outnumber the exophthalmic or hyperplastic group in the mountainous belt. We have found this experience is nearly universal among surgeons who draw their patients entirely from the endemic goiter belts.

Dr. Plummer has made an intelligent study of a group of 15,000 thyroid patients coming in to the Mayo Clinic between 1912 and 1921. He particularly made an effort to establish some outstanding difference between toxic adenomas and hyperplastic goiters. He had the clerks in the recording department of the Mayo Clinic to tabulate on special forms the clinical diagnosis and chief symptoms of every thyroid admission and also the pathologist to report on each case operated upon. For convenience he used the ten year period between 1912 and 1921, inclusive, during which period 15,000 cases were operated upon for various types of goiters. There were 5,000 cases diagnosed as exophthalmic goiters, and 2,000 diagnosed as toxic adenomas. The remaining cases were called non-toxic adenomas, with a small group of malignant, tuberculosis, and strumitis cases.

In the group of cases diagnosed years before as exophthalmic goiter, he found that a secondary operation for recurrence had been performed upon 326, or upon 6.5 per cent, and, he further stated, that the clinical diagnosis at each operation was, in every instance, confirmed by the pathologist finding diffuse hyperplasia of the parenchyma. This experience as to recurrence is in absolute accord with the generally accepted view that often following a subtotal thyroidectomy for exophthalmic goiter there is a persistency of symptoms varying in degree and sometimes a frank recurrence which requires further surgical treatment for its relief. In contrast, he found in his group of 2,000 toxic adenomas only three cases diagnosed years before as adenomas coming in for surgical relief. In two of these cases the pathologist's report did not reveal hypertrophy of the parenchyma outside of the confines of the adenoma. The third case was diagnosed clinically before operation as an exophthalmic goiter and the pathologists confirmed clinically the diagnosis. In reality there was only a recurrence of two cases, or an incidence of .01 of 1 per cent. No one maintains that there

is not a greater recurrence of adenomatous tissue following removal of the toxic adenoma, because, when the same conditions of iodine deficiency persists, there is no factor present to avoid further intracapsular hyperplasia of the parenchyma, but for some reason this new adenomatous tissue does not seem to have the property of producing an over-abundance of thyroxin.

In our judgment, the earliest clinically recognizable effect of iodine deficiency is the deposit of colloid in the thyroid gland, causing the symmetrical diffuse colloidal goiters which are very common in certain regions of the country. A certain number of these simple colloidal goiters, which have been studied pathologically, show minute adenomatous changes throughout the glandular structure. With or without treatment a large percentage of these so-called colloidal goiters will undergo remissions and partially or totally disappear. The adenomatous structures which are formed within the colloidal gland do not have a tendency to disappear and, when once it is definitely established, there is no treatment which will result in its total eradication. We believe that there are relative differences in the age in which endemic goiter makes its appearance in definite geographical communities. This difference is even observed to occur in general localities where endemic goiter is prevalent. Probably this age incidence may depend upon the ratio of iodine deficiency. We have had a number of little patients suffering with large colloidal goiters who were goiter free at birth, but whose histories would indicate that the thyroid gland began enlarging at seven or eight years of age. It is thought that, if this iodine deficiency continues to exist, a sort of compensatory physiological action takes place with the formation of new acini which develop into localized hyperplasias which may or may not be encapsulated. It is at this stage that the true adenoma first makes its appearance. If, later, a sufficient amount of thyroxin is developed for tissue requirement, then the already formed simple adenoma remains a simple adenoma. In the event that the balance between the thyroxin production and the thyroxin requirement becomes distorted by an over-secretion, then the relatively simple adenoma becomes a physical menace and assumes the character of a toxic goiter. It would seem that a simple adenoma might be converted into a toxic adenoma by the administration of large doses of iodine, although this clinical change must be considered as relatively rare. We do not feel that it presents a sufficient menace to prohibit the use of iodine in endemic goiter. We have seen no clinical value derived from the administration of iodine to patients definitely suffering from toxic adenomas. Marine and Kimball's work established without question their ability to prevent diffuse colloidal goiters and the resultant adenomas by the judicious administration of iodine in childhood. The work of these men stands out as the only constructive prophylactic effort against the occurrence of endemic goiter. Unfortunately, however, there are certain phases of this work which have been misunderstood. We feel sure that, if there was more general interest in this particular work by the physicians, we would have adopted in goiter belts some routine method of iodine administration, with a consequent greater diminution in the incidence of endemic goiter.

As yet, there is not a general agreement among surgeons as to the proper treatment of simple enlargements of the thyroid gland occurring in adult life. Personally, we feel that it is well in definite colloidal goiters, even though small adenomas can be palpated in the thyroid structure, to try such patients upon iodine therapy and, in the event that no improvement is observed, then we feel that thyroxin may be judiciously employed. When no appreciable change is observed from either of these forms of medication, then we have been guided in our policy as to surgical treatment by the wishes of our patients.

When discrete adenomatous tissue makes up the majority of the thyroid structure, even though no toxic symptoms are present, we have taken the surgical position that such glands should be removed, first, because normal retrogression and disappearance does not occur and there is a tendency of such glands to increase in size, with the possibility of pressure causing injury to the vital structures of the neck; second, because of the known tendency for the development of toxic changes; and, third, because of the recognized danger of malignancy.

The clinical picture produced by a toxic

adenoma is very well understood and it requires no further description at this time. Thyroid literature generally describes hyperthyroidism from adenomas as a disease manifesting itself in elderly people. Our own group of toxic adenoma patients, pathologically proven, 140 in number, was generally found in young adults and in middle age. The youngest patient operated upon was eighteen years of age and the oldest patient was seventy years of age. The average age of our toxic adenoma patients was 36.3. We are aware that this age incidence is contrary to the general opinion of the occurrence of toxic adenomas. Our work, however, has been done upon patients coming from the true thyroid belt where endemic goiter is most prevalent. This incidence of early occurrence of toxic adenomas possibly follows out our thought that the relative iodine deficiency in the various regions varies, and, since our endemic goiters are seen very early, there is probably no reason why our adenomas should not manifest themselves also early. The vast majority of our toxic adenomas, however, have known that they had a thyroid enlargement for many years, and an appreciable number of them have had toxic symptoms for a period of years. Our exophthalmic goiter patients have usually dated the duration of their symptoms back only a few months prior to admission for treatment. The history obtained in our records as to the onset of symptoms in this group of patients has been of interest. The adenomatous patients have told us that they were aware that they had a goiter for a period of years, but toxic symptoms had developed very gradually and they were not aware that they were suffering with thyroid disease until they began to lose a material amount of body weight. Ordinarily their loss of weight has antedated their nervousness, their tachycardia, and frequently their vascular hypertension. Rarely were our toxic adenoma patients able to tell us with any degree of accuracy the exact time of the onset of their symptoms. The patients suffering with exophthalmic goiter have usually said that on or about a certain time they suddenly became very nervous, their emotions were easily excited, they began to lose weight, and the other group of toxic symptoms became apparent. Basal metabolic studies have shown a slightly higher reading in exophthalmic goiter patients of 48.3, as contrasted with 38.6 in our toxic adenoma cases. It is of interest to note that our toxic adenomas were much more frequent in females than in males. Two out of every three occurred in females, while our exophthalmic cases were about equally divided. This fact agrees with the general opinion that endemic goiter is much more prevalent in the female than in the male.

Lahey has described a group of thyroid patients which he has called thyro-cardiacs. These people usually seek treatment around middle life. Their predominant symptoms suggest a cardiac disturbance. However, they have generally lost a considerable amount of weight over a long period of time. They usually complain of shortness of breath, their extremities are swollen, and the general evidences of cardiac decompensation are frequently apparent. The heart symptoms materially overshadow the possible enlargement of the thyroid gland. Vascular hypertension is constantly present and physical examination shows that their hearts are very large. Paroxysmal or constant auricular fibrillation may be observed in these patients. Physical examination will frequently demonstrate the presence of a small nodular adenoma in their necks, and basal metabolic studies will show a very material elevation in their basal rates. A careful history will usually elicit that these patients have given evidences of thyroid toxemia at various times in their lives. We have seen a number of these patients with varying degrees of disability, some of them being actually bedridden. Following the work of Lahey, we have operated upon a number of them and have been very much gratified with the improvement which has been observed. A few of these people who have been semi-invalids have been restored to a state of usefulness as the result of their thyroid operation. We have sustained no mortality in this group of twenty-seven patients operated upon. It is interesting to know that pathological studies upon twenty-three of the twenty-seven patients showed that the thyroid structure was made up of intracapsular hyperplasia or adenomatous structure.

There would seem little difficulty in establishing the clinical diagnosis of exophthalmic goiter. The symptoms are usually clear-cut

and obvious. The history of an acute onset of symptoms, of nervousness, of loss of weight, of increased appetite, of tachycardia, of tremor, and of vascular hypertension, with exophthalmos in an appreciable number of cases, are ordinarily constant. Very little is understood, as yet, about the creative factor in the production of exophthalmic goiter. We know that all the thyroid tissue changes its physiological purpose and produces an overabundance of thyroxin. We have reason to believe, however, that there is also another foreign and poisonous material generated in the hyperplastic goiter which has not yet been isolated. Our experience has led us to feel that the exophthalmic goiter patient is more acutely sick than the patient suffering from toxic adenoma, but ordinarily the exophthalmic patient has not sustained extensive degenerative changes in his vital organs, as contrasted with the permanent and lasting changes which are often seen in the long standing violently toxic adenoma. Until a few years ago we were helpless to handle a certain type of exophthalmic goiter patients, except by resorting to unsatisfactory procedures, such as X-ray and radium therapy, ligations, lobectomies, and hot water injections. All these methods were uncertain in their results and the mortality in the surgery of exophthalmic goiter was widely criticized.

Plummer's constructive work for the administration of iodine in the preparation for operation of this group of patients has put the treatment of exophthalmic goiter upon a substantial and firm basis. The greatest difficulty now is to get a general and satisfactory understanding of Plummer's work clear in the mind of the medical profession. All recent reports confirm Plummer's primary conviction that iodine was only useful in the preparation of patients for operation, and that, after its administration for from twelve to fourteen days, the maximum benefits anticipated from its use were experienced. Further, iodine therapy only results in the confusion of the patient's symptoms without any permanent or lasting benefits. We have seen no recorded case of exophthalmic goiter which has been cured, or even permanently improved, as the result of continued iodine administration. This misunderstanding about the administration of iodine to exophthalmic goiter patients has resulted in an appreciable number of such patients having had a long course of iodine therapy before they are sent to the surgeon for treatment. When this course has been followed, the benefits derived from iodine as a preparation for surgery have been very materially lessened and it is never possible to carry these patients through the same smooth operative course as might have been possible had iodine not been administered.

There are a certain number of exophthalmic goiter patients who vary in their response to iodine, and an appreciable number of such patients must still be handled by the multiple-stage method of surgical treatment. It is very difficult to attempt to describe which patient may be treated by subtotal thyroidectomy and which would be better handled by the multiple-stage operation. I can only say, however, that the clinical course of such patients, their response to therapy and physiological rest, and repeated basal metabolic studies are an index, along with the general condition of the patient during the operation, as to when a patient has reached the point of surgical tolerance.

A few years ago we operated upon most of our toxic thyroid patients under local anesthesia, but the harrowing experiences of our patients, along with the increased surgical effort necessary to satisfactorily do local anesthesia thyroid operations, convinced us that a light general anesthesia was preferable. In the last few years we have employed routinely ethylene and oxygen as a general anesthetic in such work, and have been so gratified with its routine success that we have hesitated to accept any of the more recent modified anesthetics.

Bibliography

Marine, D., and Kimball, O. P.: The Prevention of Simple Goiter in Man. *Jour. Am. Med. Assn.*, 1921, LXXVII, 1068-1070.

Plummer, H. S., and Boothby, W. M.: The Value of Iodine in Exophthalmic Goiter. *Jour. Iowa State Med. Soc.*, XIV, 66-73.

Lahey, Frank H.: The Treatment of Adenomata of the Thyroid. *Surgical Clinics of North America*, December, 1924.

Plummer, Henry S.: The Function of the Thyroid Gland. *Collected Papers of the Mayo Clinic and the Mayo Foundation*, 1925, XVII, 473-500.

Pemberton, John deJ.: Progress in Knowledge of Goiter with Particular Attention to Surgical Treatment. *Collected Papers of the Mayo Clinic and the Mayo Foundation*, 1929, XXI, 493-503.

DISCUSSION

DR. J. ALLISON HODGES, Richmond: I want to ask Dr. Emmett two questions. The first is how he makes a diagnosis between an incipient toxic adenomatous thyroid case and an early case of tuberculosis—in other words, if there are any well defined differences that can be clinically outlined. And the second question is, if he had a case of early tuberculosis with a toxic adenomatous goiter, would he operate upon that case?

DR. EMMETT, closing discussion: In answer to Dr. Hodges' question as to the differentiation between patients suffering with toxic adenomas and pulmonary tuberculosis, I wish to say that there are ordinarily well defined methods of differentiating these two diseases, although I must admit that in some instances the differential diagnosis is not simple. In the first place, patients suffering with toxic adenomas ordinarily give a history of having had a goitre for a long period of time, probably years. Suddenly, for unaccountable reasons, this goitre flares up and begins to manifest evidences of hyperthyroidism, such as tachycardia, increased nervousness, tremor, vascular hypertension, and in most instances there is material elevation in the basal metabolic rate. When it is difficult to palpate an adenoma in the neck, X-ray examination of the chest will sometimes show the adenoma to be located retrosternally. The loss of weight is more sudden than is ordinarily experienced in people suffering with pulmonary tuberculosis. The tachycardia in tuberculosis is frequently paroxysmal; whereas it is usually constant in hyperthyroidism. Physical examination and stereoscopic plates of the chest will ordinarily confirm the diagnosis of pulmonary tuberculosis.

Dr. Hodges has asked what disposition we would make of a patient who had pulmonary tuberculosis and who also had a definitely toxic goitre. This particular problem rarely confronts us. However, I may say that I would not hesitate to operate upon a patient with hyperthyroidism from a toxic adenoma who was a known pulmonary tuberculosis case, granting that the hyperthyroidism was sufficiently severe as to be incapacitating. The operation for the enucleation of a toxic adenoma can be very satisfactorily done under local anesthetic without undue pain and with very little trauma. The more recent supplementary anesthetics give promise of constructive work under general anesthesia without stirring up old latent pulmonary tuberculosis. I have personally had little or no experience with sodium amytal or avertin in this particular field of surgery.

TULAREMIA IN DIFFERENTIAL DIAGNOSIS: A REVIEW OF THIRTEEN CASES.*

By STAIGE D. BLACKFORD, B. S., M. D., University, Va.

Tularemia should be of especial local interest because the total of one hundred and thirty-five cases reported in Virginia is the largest yet reported by a single state. A great deal has been written about the disease in the past decade but one aspect appears to have been rather neglected; very little stress has been put upon its importance in differential diagnosis. When the pathognomonic skin or conjunctival lesions with glandular involvement are observed and a characteristic history is obtained, the diagnosis is obvious. In those instances where the lesions are lacking, the possible confusion with typhoid fever has been emphasized. But no one has called attention to how perplexing the multiple manifestations of the disease may be when the source and site of the infection are not recognized. At the University of Virginia Hospital, these atypical cases are all too common and we have encountered manifold diagnostic troubles in our thirteen cases. A review of these with reference to some of the conditions which tularemia may simulate should be of interest to the general practitioner and internist.

Perhaps we should begin with our one case which presents the more or less classical picture: A white woman entered the Hospital complaining of a painful ulcer of the thumb with enlarged and tender epitrochlear and axillary glands. She volunteered that ten days previously she had stuck her thumb with a rabbit bone. That night the thumb had become so painful that she could not sleep. The following day she had tried unsuccessfully to evacuate pus. The third day she called her physician because of glandular involvement and general symptoms which consisted of headache, malaise, anorexia, joint aches, nervousness, chills, and prostration. The doctor told her she had "rabbit sickness." She was confined to bed at home for a week and then she was sent to the Hospital for treatment of the glands, which subsequently suppurated. She had a high fever for nearly a month and was discharged at the end of the fifth week in fairly good condition. During her stay in the Hospital, the agglutination test with *B. tularense* became increasingly positive in titre.

All the other twelve vases were confusing at some time during the course of their illness. Four had their presenting symptoms in the skin or glands; two suffered from general toxemia and the remaining six presented problems due to pulmonary conditions.

If one were "tularemia-conscious," any involvement of the skin or glands should suggest tularemia as a diagnosis, but even some of these have offered difficulties: A colored man presented himself at the Outpatient Clinic, complaining of weakness of four weeks' duration. Routine examination disclosed an

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indurated ulcer of the thumb with tremendous enlargement of the axillary gland. Tularemia was suspected but the patient vigorously denied contact with rabbits. The lesion suggested a chancre and so a dark field examination was done but no treponemas were found. Next, 3 c.c. of thick creamy pus was aspirated from the axillary gland and we felt more sure of our original diagnosis of tularemia; this tentative diagnosis was confirmed first by obtaining a definite history from the patient's employer that the patient had skinned a rabbit five weeks previously and then by a positive agglutination reaction.

Another patient sought surgical opinion about an enlarged axillary gland. A diagnostic biopsy was performed and the microscopic sections suggested the probability of a tularemic infection. The patient was then more carefully examined and a primary ulcer was found. On questioning, he admitted exposure to rabbits and his serum agglutinated *B. tularense.*

One of our patients with tularemia was admitted and treated on the Genito-Urinary Service. He was a colored boy who was referred for a painless hematuria. There was a previous history of attacks which suggested renal colic, but his present illness had begun two weeks previously when he had been taken suddenly ill with general malaise, vertigo, headache, nocturia, and urgency. Several days later a perineal ulcer and multiple ulcerations on the glans penis developed. Bilateral inguinal adenitis followed shortly. On the morning that he was referred, a painless discharge of blood from the urethra occurred which lasted a half an hour. His admission temperature was 103. Cystoscopic examination could not be done because the genital infections were thought to be suggestive of syphilis, chancroids or possibly granuloma inguinale. Routine agglutinations were done a few days later because the fever persisted. The agglutination with *B. tularense* was positive. The patient was discharged in good health after a month in the Hospital. No history of exposure to rabbits was ever obtained and the infection was thought to be due to a tick-bite.

The next patient was a white woman who came in complaining of "boils all over." A month previously her physician had treated her for a "boil" on one finger, which had been followed a few days later by a generalized eruption of pustular acne. About ten days after the finger lesion appeared, the axillary gland became fluctuant and had to be incised. The patient had had to remain in bed for most of the month preceding her admission because her knees had been so swollen and painful that she could not stand. During this time she had run a fever consistently. The possibility of tularemia had not been considered by her local physician, probably because of the skin eruption and the joint symptoms, but when she was questioned about rabbits, she recalled having skinned one just prior to the onset of her sickness. Her agglutination reaction confirmed our suspicions. She was convalescing at the time of admission and was discharged much improved about ten days later. This is the only case in our series which showed general cutaneous symptoms.

The next group is the one in which symptoms of general toxemia predominated. Although attention has been directed many times to the similarity between tularemia and typhoid or pyelitis, this question arose in only two of our series.

A young white man was under observation for six weeks, with symptoms so suggestive of typhoid fever that this diagnosis was made in spite of a negative Widal reaction and a negative blood culture. He was recalled five months later and the diagnosis of tularemia was substantiated by a positive agglutination. This case occurred early in our experience with the disease and I do not believe that such an error would be made now.

In the other instance, both pyelitis and typhoid had been suspected before the correct diagnosis was made. An elderly woman stated that eight days previously she had had a sudden onset of nausea, vomiting, headache, chills, fever, and pain in the right side of her abdomen and in the right costo-vertebral angle. There was tenderness on pressure over the right kidney and a "boil" was found on the right buttock. Catheterized urine contained 10-15 pus cells per high power field; the leukocyte count was 7,000. After a week, the pus cells in the urine decreased and the fever persisted so a Widal test was done; along with the Widal agglutinations for undulant fever and tularemia were included. To our surprise the serum agglutinated *B. tularense* only. The titre increased in the subsequent weeks and the so-called boil became a chronic ulcer. This ulcer was considered the site of inoculation and due to its location on the buttock, it was

thought to have been due to a tick-bite infection.

The six remaining cases showed symptoms and signs referable to the respiratory system. The practical importance of recognizing the lung manifestations of tularemia is illustrated by the following report: A high school student entered the Hospital three years ago with symptoms which were first thought to be due to typhoid fever even though he had recently been inoculated against this disease in an army camp. Shortly after his admission, the prominence of chest signs made this diagnosis seem unlikely; nearly a quart of straw-colored fluid was removed from the pleural cavity and roentgen examination revealed intrapulmonary changes which were diagnosed as tuberculous pneumonia. The sputum was repeatedly negative for tubercle bacilli. After two and a half months in the Hospital he was transferred to a sanatorium with the diagnosis of "tuberculosis of pleura; tuberculous pneumonia." He remained there for eight months during which time he gained forty pounds. More than two years later he returned to say that he had been reading about rabbit fever in the newspapers and since he recalled very definitely skinning a sick rabbit two days before the onset of his illness, he wondered if he might have had that disease instead of tuberculosis. The agglutination done at his request was strongly positive.

In another very similar case the diagnosis might easily have been obscured if we had not followed it from the beginning. A woman was admitted with a finger lesion and enlarged glands which were proven to be tularemic. A persistent cough was present from the onset of her illness and so her chest was examined frequently. Five weeks after admission definite physical signs of pleural effusion were found and 400 c.c. of a straw-colored fluid was aspirated. She then made an uneventful recovery.

The next case will be reported in detail elsewhere: A colored farmer was sent to the Hospital one month after the onset of his illness. A diagnosis of tularemia following the skinning of an opossum had already been established and he was referred for treatment of a lung abscess. He went steadily downhill and died eight days after admission. At necropsy, a large abscess of the lung was found. It was thought to be pyogenic from the gross examination, but histologic study demonstrated that the lung lesion presented many features more suggestive of tularemic necrosis than pyogenic necrosis.

The pulmonary findings were hardly the most outstanding feature in the following case but since they were definite, it is included with the lung group: A feeble-minded white boy was apparently in good health until he had a convulsion the day before he was admitted. He had two further seizures before being brought to the Hospital and his fourth occurred soon after he was put to bed. His temperature was 105. A lumbar puncture was done immediately and the fluid was bloody. This indicated the possibility of a meningeal hemorrhage, but tetanus, epilepsy and meningitis were also considered. No further convulsions occurred and their cause was not determined. In view of the elevated temperature and low leukocyte count, the routine agglutinations were performed and were negative. Four days later, signs and symptoms of pulmonary consolidation with pleurisy occurred and these findings were corroborated by roentgen examination. A tentative diagnosis of pneumonia was made. But, after several more days, swelling of the parotid and cervical glands became so large that the boy could not open his mouth and no association could be made between these findings and those in the chest. A retropharyngeal bulging, which was taken to be an abscess, was located but three attempts to drain it were unsuccessful. Aspiration of the cervical glands obtained several cubic centimeters of sterile pus. During the following month both the enlarged glands and the septic temperature continued and so at the end of this period the glands were incised. Microscopic study of the pus and necrotic material obtained indicated either tuberculosis or tularemia. The agglutination for tularemia was repeated and was strongly positive. The boy made a good recovery. Due to his mental condition, no information concerning the mode of infection could be obtained.

The first case of tularemia which we recognized occurred in an elderly gentleman who had been prostrated for a week with a high fever. An initial diagnosis of bronchopneumonia was made on account of prostration, fever, productive cough, and rales. The correct diagnosis was suggested by news that a brother, with whom the patient had hunted rabbits had died of tularemia. The diagnosis

in our patient was confirmed by agglutination test.

The last case offers an interesting speculation. A colored woman in whom a definite diagnosis of tularemia had already been made was referred to the Medical Outpatient Department for treatment of a "bad cold," which she said had developed as result of soaking her hand in wet magnesium sulphate dressings. Musical rales and squeaks were heard in both lungs; the diagnosis of chronic bronchitis was made. Whereas it would be difficult to prove that these chest signs were associated with the tularemia, it seems justifiable to consider that they were in view of the cases already presented.

Summary

Thirteen cases of tularemia have been briefly presented with reference to the difficulties encountered in differential diagnosis. These have simulated a wide variety of conditions, i. e., syphilis, primary glandular adenopathy, genito-urinary disease, pustular acne, typhoid fever, pyelitis, tuberculosis, lung abscess, bronchopneumonia, central nervous system disease, and chronic bronchitis. Since accompanying pathologic changes in the chest have been found in six of these thirteen unselected cases, it is suggested that they are manifestations rather than complications of the disease.

Discussion

Dr. H. G. Grant, State Epidemiologist, Richmond: Doctor Blackford's paper is a very valuable contribution to the clinical knowledge of tularemia. This disease is not a very common one. The first case was reported in Virginia in 1920, from Rockbridge County; from then on through 1929—115 cases have been reported. Doctor Blackford is very fortunate in having seen thirteen of these cases, and also in having seen them in hospital where he was able to make such a complete study.

Regarding the diagnosis of tularemia, one or two things should be kept in mind. The first is, as Dr. Blackford has pointed out, that there is such a disease. The diagnosis is missed in many instances, because the doctor does not happen to think of tularemia. The second thing is to be kept in mind is the common association of tularemia with the handling of rabbits. In most of the cases reported to the State Department of Health an association with rabbits is given. Rarely we have a report of tick bites or of the handling of squirrels.

One feature of tularemia which seems not to be thoroughly understood is that tularemia is a septicemia and that the complications, such as pleurisy, bronchopneumonia or lung abscess are manifestations of the septicemia. The agglutination test is quite a help in confirming the diagnosis. During the first week it is negative. On the eighth or tenth day it becomes positive. The titre increases up to the sixth week and decreases from the eighth week. The agglutination is usually permanent. An interesting example of the permanency of the agglutination test occurred in Rockbridge County, where bloods taken in 1927 showed positive for cases of tularemia which occurred in 1920.

I should like to take this opportunity of thanking the physicians of the State for answering the many questionnaires which I send out during the year.

Dr. A. L. Tynes, Staunton: The reference to the first case of tularemia identified in Virginia suggests to my mind the second case, which I shall report because it occurred in the adjoining county of Augusta, and on account of the obscure manner of infection.

In the fall following Dr. Davidson's case, I was called to see a man suffering with an infected thumb. The appearance of the wound at that time was regarded as being most peculiar. It responded very slowly to treatment and was complicated with a large axillary abscess. This was incised and drained for weeks. Consultation was requested on account of the unusual appearance of the primary focus of infection and the marked prostration and anemia incident to the infection. The memory of the case continued to recur to me and years afterwards when I first heard of tularemia, I became convinced that this must have been such an infection. A specimen of blood was secured and sent to the Hygienic Laboratory and a prompt reply identified it as tularemia, and requested a history of the case and the mode of infection, stating that it was the second case thus far identified in Virginia.

My memory of the accident was very clear but was verified in conversation with my friend, the patient, and was as follows: While pruning rosebushes in his garden he stuck a thorn in his thumb; within a few days the infection developed.

Asked as to his contact with rabbits or squirrels, he stated positively that he had had none, but that his garden was full of rabbits, which played in the rosebushes. Presumably, a bunny had scratched his back on the same thorn which had wounded his thumb, resulting in the attack of tularemia, which prostrated him for months.

Dr. Staige D. Blackford, University, closing the discussion: At the University of Virginia Hospital we have recognized almost one per cent of the total of the cases reported in this country. Eight of the thirteen were undoubtedly due to skinning an opossum, another may have been due to eating an opossum, and three (from the location of the primary lesion), appeared to have occurred from tick bites.

AVERTIN IN GENERAL SURGERY.*

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While much has been done for anesthesia in the last ten years, it has only been in the last two years that much interest has been aroused in a new method of general anesthesia, by the rectal administration of tribrome ethyl alcohol, or avertin. There have been numerous reports in European medical journals based upon pharmacological studies and chemical

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observations. In Germany alone over 500,000 patients have been given avertin.

Satisfactory as colonic oil, ether administration proved to be in careful hands, it fell short of perfection and constant effect. In addition, the simplicity of administration of avertin stands out as an advantage over colonic ether and it is a good deal less trouble to the anesthestist and patient.

To Willstatter and Duisberg, German chemists, is due the credit of an almost ideal rectal narcosis, when in 1926, from the yeast fermentation of bromal, tribrome ethyl alcohol was produced and was named by them, avertin. Its anesthetic properties were demonstrated by investigations of Professor Eichholtz.[1] Avertin being inflammable but not explosive, is supplied in heavily stoppered glass bottles in liquid form. It is a heavy, oily solution with a bromine odor in which the drug is stabilized by the addition of amylene hydrate. One gram of avertin is equivalent to 1 c.c. of this liquid.

The absorption of the drug is fairly rapid and is practically all absorbed from the bowel in about one hour. Staub,[2] working at the Pharmocological Institute of the University of Munich, found that 80 per cent is absorbed in the first twenty minutes and 95 per cent within the first two hours.

During anesthesia, Sebening[3] has found it in a concentration of 6 to 9 milligrams per cent in the blood. It is chiefly eliminated by the kidneys and in traces by the sweat, after combination with glycuronic acid in the liver. Staub recovered 81 per cent of the drug in this combination from the urine. Traces of bromine could be recovered from the sweat, but none from the respired air or the feces. There appears to be no difficulty on the part of the kidneys to excrete this glycuronic bromine compound and avertin has been used in marked kidney disease without there being any evidences of difficulty with its excretion. Advanced liver disease is probably a contraindication, but it will take more accurate clinical observation and physiological study to establish this point. The studies of Brugger and Bourne, of McGill University, bear on this point. In their experiments they gave dogs 500 mgms. of avertin per kilo of body weight, and noticed no ill effects on the liver or kidneys.

Its irritant action can be demonstrated on the large intestine of the rabbit, but not on the dog or man.

In common with other anesthetics, the respiratory rate is slowed and with over-dosage means a respiratory arrest. During anesthesia an increase in the rate could be affected by the use of carbon dioxide, caffeine or lobeline.

Little work has been done on the biochemical changes under avertin in regard to: 1, Blood sugar changes; 2, Changes in inorganic blood phosphate content and urinary phosphates; 3, Acidosis as measured by the carbon dioxide combining power of the plasma; 4, Liver function under avertin. Dr. Bolliger[4] of the Laboratory of the Department of Urology, University of Sidney, commenced an inquiry into these factors, but the number of dogs so far investigated does not warrant any fixed conclusions.

In regard to blood sugar, a hyperglycemia occurs just after induction, such as after the inhalation anesthetics but is of a milder grade and, towards recovery, the normal level is resumed and there is no further rise in the recovery hours.

Bolliger has shown that the phosphate curve in anesthesia indicates the quality of the anesthesia in that a low phosphate reading is found in a light clinical anesthesia of a satisfactory type. An increase in the phosphates was found to be associated with cyanosis, asphyxia and lowered blood pressure.

Anesthetics like amytal, given orally in amounts sufficient to produce any degree of relaxation, increase the blood phosphates and, coincident with a definite increase in phosphates, the animal has not recovered from the anesthesia. For this reason the phosphate findings under avertin were awaited with no little interest and they seemed to be of a different order from other anesthetics.

In avertin anesthesia lasting one hour, no depression or a very slight depression of phosphates occurred, and only for a few minutes after induction. Towards recovery the phosphates increase slightly as compared with the normal level. This continues for three hours after anesthesia when they return to their normal pre-experimental level. We observe from this a complete contrast to that seen in inhalation narcosis; regardless of the anesthesia, a depression was observed during the recovery period.

It is not known if this is a characteristic of avertin only, or of rectal narcotics in general,

though peroral administration of chloral hydrate prodnces changes similar to those from the inhalation anesthetics. Estimation of the urinary phosphates showed corresponding changes to those in the blood, that is, a slightly diminished output during the period of anesthesia, as if there was a slight demand for them, with a slightly increased output during recovery, again in definite contrast to the inhalation narcotics. Urinary secretion, as a whole, was unimpaired.

In regard to acidosis, a well recognized fact of inhalation anesthesia, avertin behaves differently. In the case of ether, a more or less immediate fall occurs in the carbon dioxide combining power of the plasma; under avertin, this remains stationary within an hour of the induction. A slight fall occurs, reaching its minimum about two hours after anesthesia.

During avertin anesthesia there occurs a drop in the systolic pressure that varies from ten to twenty points. I have had in my own experience a fall of 76 milligrams without any ill effects. This fall is found in the early part of the anesthetic and soon returns to normal.

The pulse rate may be slightly increased, but the quality remains good. Unger and May[5] have studied a number of cases with the electrocardiograph and were unable to find any changes attributable to the anesthetic. Ephedrine can be used in combating the fall of systolic pressure should conditions warrant it. The drug seems to have a slight antipyretic effect also found to be antiseptic and capable of killing staphylococci and colon bacilli in one minute when subjected to a 3 per cent solution.

Avertin, when given by rectum, or perorally, causes a rapid induction of anesthesia, without any excitement stage. Muscular relaxation and unconsciousness are similar to those of ether. Post-anesthetic upsets are not seen and the patient usually awakes as though from a deep sleep. Lendle[6] compared the toxicity of this drug with ether, chloroform, and Gwathmey ether-oil anesthesia and found it less toxic. This type of anesthesia is indicated in practically every type of surgical procedure as in: 1, Surgery around the head and neck; 2, In patients who fear an anesthetic or those who have had trouble with former anesthetics; 3, In exophthalmic goiter; 4, In children; 5, In thoracic surgery and in obstetrics.

The only contra-indications to its use are where the liver is seriously diseased, and in inflammatory conditions of the rectum and colon. In this country there have been about a dozen articles on the subject, reporting several thousand cases, one of the most interesting being an article by White and Kreiselman, of Washington, D. C. They report 500 cases without a mortality.

Technique and Administration

The method of administration as practiced at the Johnston-Willis Hospital is to give an enema the night before operation, and 10 grains of allonal at bedtime. Forty-five minutes before operation, I give 1/8 gr. of morphine with hyoscine hydrobromide grs. 1/100 to 1/150. The required amount of solution is measured out and enough distilled water is added to make a 2½ to 3 per cent solution and is heated to 38° C. The avertin is then added and the mixture is shaken or stirred well until a clear solution results. I usually use from 60 to 100 mgms. per kilo of body weight.

The most important points are that the temperature must not exceed 40° C. and that the final solution is free from hydrobromic acid, and therefore, free from dibromacetaldehyde. To confirm this we add one drop of Congo red and if the color remains orange-red, it is ready for use; if it turns blue, we know that it has split up and is unsafe for use. I have not had the latter experience at anytime.

With the solution now ready, the patient lies in bed on the left side and the avertin solution is slowly run in from a funnel through a small rubber tube or catheter. This should be vaselined and passed at least four inches beyond the anus. After all the preparation is in, the tube may be clamped and left in position, or it may be withdrawn. The injection is well retained and only takes a few minutes. Avertin is rapidly absorbed and in about ten to twenty minutes the patient falls off in a quiet sleep. I have seen no excitement stage. Respiration is quiet and regular.

During the induction period, we should keep the patient quiet, the room dark and keep out all sources of irritation. The patient is then taken to the operating room and prepared for operation. If the patient is not well under, any of the supplementary anesthetics can be used, but only a minimum amount will be necessary.

Dr. M. P. Rucker, of the Obstetrical Depart-

ment of the Johnston-Willis Hospital, reports on his observations in 118 cases:

Deliveries with avertin alone	9
Deliveries with avertin and ether	98
Deliveries with avertin and chloroform	2
Deliveries with insertion of bag	4
Curettements with avertin and local	3
Curettements with avertin alone	1
Curettements with avertin with ethylene	1

His observations are: No difference in post-partum bleeding, resuscitation of babies, etc., from the general run of patients. Several babies, when ether was given, at the height of the avertin analgesia required resuscitation. In one of the four cases where avertin was used before the bag was placed, on account of extensive nervousness of the patient, the avertin was expelled during the operation and messed up the field of operation. The outstanding fact in these cases is the satisfaction of the patient. This occurred in 100 per cent of the cases.

It is especially useful in cases of non-dilating cervices. A bag is placed and weighted and avertin is given (60 mgms. per kilo of body weight) and dilatation usually takes place with surprising quickness. No effect was noticed on uterine contractions except they were further apart.

In the surgical department we have used it in 102 cases and obtained a good anesthesia in a number of cases. Eighteen cases required no anesthetic except local. Sixty cases required a small amount of supplementary anesthesia and twenty-one cases required a large amount. In four cases no anesthesia was produced.

Dr. F. S. Johns, chief of the surgical department of the Johnston-Willis Hospital, finds that it is especially indicated in surgery about the chest and heart, especially in pulmonary tuberculosis when thoracoplasty is done.

To date we have used avertin in 226 cases.

Conclusions

There seems to be no contra-indication to the use of avertin as to age; some workers speak very highly of its use in children. The chief care in the nursing is watching for relaxed jaw or tongue, during the induction period as well as the recovery, and I think that all avertin cases should be required to have a nurse, or and airway inserted until recovery. Rectal wash outs have been used, but these are unnecessary as all of the drug is absorbed in about one hour.

My usual dosage is from 60 to 100 mgms. per kilo of body weight. In cachectic, feeble, and obese patients, the dose should be reduced.

Avertin has its disadvantages, that is, its decomposition with the production of dibromacetaldehyde and its rapid absorptlon from the intestinal tract, may permit the flooding of the patient with a toxic dose that cannot be removed. This can be overcome by care in administration of a proper dose and attention to the details of its preparation.

Its advantages are many: 1, Restful post-operative awakening; 2, No headache; 3, No nausea nor vomiting; 4, Peaceful induction; 5, Absence of pulmonary complications—amnesia and psychic shock.

In closing, I wish to say that avertin is not an anesthetic that anyone can give at anytime. It requires an experienced anesthetist to control the superimposed anesthesia and great care should be exercised in its administration. So far it approaches the ideal rectal anesthetic more closely than any other at our disposal.

References

1. F. Eichholtz: *Deutsche Med. Woch.* Vol. xvii, April, 1927.
2. Staub: *Munich Med. Woch.* Vol. xiv, p. 595, 1928.
3. Sebening: Surgical Congress, Berlin, 1928. *Zentrablatt fur Gynekologie.* Vol. xxv, p. 1609, 1928.
4. Bolliger: *Journal of Biological Chemistry.* August, 1926.
5. Unger & May: *Zentrablatt fur Chirurgie.* Vol. li, p. 3272, 1927.
6. Lendle: *Arch. fur Exper. Path. and Pharmakol.* Vol. cxxxii, p. 214, 1928. Narkose and Anaesthesia. Vol. v., p. 238, 1928.

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TRIBOMETHYL ALCOHOL (AVERTIN) A RECTAL METHOD OF GENERAL ANESTHESIA.*

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and
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A rectal method of general anesthesia was first advocated by Pirogoff in 1847. Except for Gwathmey's colonic method of oil and ether, little enthusiasm has been shown for rectal or colonic anesthesias until the recent introduction of avertin. In 1923, two Germans, Willstätter and Duisberg, first produced tribromethyl alcohol, commercially known as avertin. Yet its anesthetic properties were not

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demonstrated until 1927 by the pharmacological studies of Eichholtz. Since then avertin has been used extensively abroad, particularly in Germany. This drug has been generally available in America only for the last few months, but through the courtesy of the Winthrop Chemical Company the authors have been using avertin for a little over a year. More than two hundred and fifty European and fifty American articles have been published on experimental and clinical observations in several hundred thousand cases. As an outcome of the earlier of these reports it is now generally accepted that avertin should usually be employed only as a basal anesthetic, namely, as the chief means of inducing unconsciousness, supplemented when necessary by a small amount of a local or inhalation anesthetic. All investigators agree that avertin's principal vyalue is to eliminate "psychic shock," a factor which can seldom be avoided in general or local anesthesia. The patient quickly and peacefully falls asleep in his bed and does not awaken until he returns to his room after the operation.

Chemical and Physical Properties

Avertin is tribromethyl alcohol (CBr_3CH_2OH) and is formed by the action of yeast on bromal. It is a white crystalline substance, which readily sublimes, has a melting point of 79-80 degrees C., and is soluble in water at 40 degrees C. up to 3.5 per cent. It is subject to changes if exposed to light and air. If it is heated above 40 degrees C., hydrobromic acid and dibromacetaldehyde are formed, which products are toxic and irritating to tissues.

Avertin fluid is a solution of avertin in amylene hydrate. One c.c. of the solution contains 1 gram of avertin. The advantages of having the drug dissolved in amylene hydrate are, first, that it dissolves avertin in high concentration and is soluble in water, and, second, amylene hydrate has a slight hypnotic and respiratory stimulating action. It is also volatile and inflammable (not explosive). The bottles, therefore, should be kept tightly stoppered and not exposed to an open flame. Users of avertin fluid consider it more efficient than the powder or crude drug.

Pharmacology

Absorption: The intestinal mucosa absorbs avertin more rapidly than the water in which it is dissolved. Straub found that 80 per cent is absorbed in the first twenty minutes and 95 per cent within the first two hours after administration.

Elimination: In the body avertin combines with glycuronic acid and is eliminated in this form by the kidneys. We have noted a decided increase in the specific gravity of the urine during this period. Traces of bromine have been found in the sweat. Parsons has found that about 72 per cent of the bromine was excreted in the urine during the first forty-eight hours, and eventually he has recovered over 98 per cent.

Toxicity: When avertin is administered orally or by rectum, 80 to 150 mg. per Kg. of body weight is the dose for anesthetic purposes and about 500 mg. per Kg. of body weight is the toxic dose. This gives a therapeutic index which is higher and safer than any of the other anesthetics that are now available. It has also been shown that the toxicity subsequent to the combined use of avertin and ether was less than when either one of these agents was used alone. In animals that have been given over one hundred anesthetic inductions over a short period of time, no changes of the parenchymatous organs were demonstrable. Avertin has very little action upon the liver function as determined by the bromosulphalein test (Bruger et al.), comparing favorably in this respect with amytal and ether. Careful records of the repeated laboratory and physical examinations before and after operation have been made and no noteworthy changes have been observed in our series.

Local effect: The anesthetic solution of avertin has apparently no effect on the intestinal mucosa and can be safely repeated at frequent intervals. No patient in our series complained of rectal or colonic irritation and no passage of mucus or blood from the bowel has been noted that could be attributed to avertin. This solution is also germicidal to a degree that colon bacilli and staphylococci are destroyed in about one minute by a 3 per cent solution.

Anesthetic effect: The average time for unconsciousness to be produced after the rectal administration of a 2.5 to 3 per cent solution of avertin is seven minutes. This rapid induction is not attended by any excitation or unpleasantness. The reflexes become weak, the general musculature becomes relaxed and the pupils contract. Except for a slight increase

in the rate, the pulse is not materially changed. Guttman states that electrocardiographic studies during anesthesia showed no changes. The systolic blood pressure falls 10 to 20 mm. with only a slight change in the diastolic pressure. As the anesthesia progresses, the systolic pressure tends to return to normal. The rate of respiration is slowed and breathing becomes shallow. This is often accompanied by pallor and occasionally by a slight cyanosis which soon clears up, even without the administration of carbon dioxide and oxygen, or caffeine. As with any other general anesthetic which causes generalized relaxation, distinct cyanosis will develop if the patient is not watched carefully and a clear airway maintained at all times. Compared to colonic or rectal oil and ether, rectal avertin is superior in all respects. No other anesthetic agent is known from which awakening after a deep narcosis is so smooth and the disappearance of by-effects so rapid.

The initial stage of avertin anesthesia generally lasts from one and one-half to two hours. Relaxation is usually sufficient for the less major operations and occasionally even for major operations. We feel that it is much safer to use avertin as a basal anesthetic primarily with a dosage ranging from 80 to 120 mg. per Kg. of body weight, supplementing it with ethylene, nitrous oxide, ether, or with procaine locally. Partial or complete failures will occur if the patient expels the solution within the first twenty minutes. This may be due to improper preparation or lack of cooperation of the patient as sometimes occurs in infants or children.

Post-operative effect: At the close of the operation the patient is usually dry, warm and has a good color. The patient reacts soon after returning to bed and may complain of pain or thirst. At this time morphine is given hypodermically which quickly brings relief and the patient falls asleep again for several hours. Throughout this period post-operative pain, nausea, vomiting, and abdominal distention are usually absent and amnesia is a welcomed and characteristic feature. "Even though the narcosis has been very light, there will be no memory of anything from the time of injection. Further, the events of the next twenty-four or thirty-six hours will not be remembered with any clearness, and the whole horrible business of being anesthetized and of recovery is thus not only deminished in fact, but is minimized in retrospect" (Edwards). No changes have been noted in bleeding either at the time of operation or afterwards, wounds have healed without delay and the post-operative course has been smoother and more pleasant than with other general and local anesthesias. The reacting period of three patients in our series was noisy and restless. This lasted only for a few minutes and rapidly disappeared after a hypodermic of morphine.

Dosage: The dose is determined by the patient's body weight (in kilograms), the general condition and the patient's age. Avertin is safest and most valuable as a basal anesthetic, supplemented by another general or local anesthetic when necessary. The average dose for our cases was 100 mg. per Kg. of body weight, with the smallest dose 70 mg. and the largest 120 mg. In three cases the average dose produced complete surgical anesthesia, but in the remainder ether, ethylene, or procaine locally were used to supplement. The total amount of avertin fluid did not exceed 10 c.c. for any one patient. Children and even infants were more tolerant than adults and their average dose was 110 mg. per Kg. of body weight with relatively more supplemental anesthesia. For debilitated, cachectic, anemic, dehydrated persons and for obese patients the dosage was 70 to 90 mg. per Kg. of body weight. No obstetrical or psychiatric cases were studied in this series, but a review of the literature indicates that obstetrics particularly is a field for its extensive use. A dose of 60 mg. per Kg. of body weight has been suggested by E. Martin and others, and this dose may be safely repeated two or three times at three to four hour intervals.

Effect of repeated doses: In experimental animals, repeated administration of avertin over a long period produced no injury to the internal organs. Five cases in our series have been given avertin repeatedly with no ill-effects. Three cases were given two avertin anesthesias each within a period of a few days and two other cases (ages nine and thirty years) were given four avertin anesthesias apiece within a few weeks for reconstructive plastic surgery of the face and neck. No ill-effects were noted and no increase in tolerance to the drug was observed.

Administration

Preparation of patient: The pre-operative preparation is important though in a few

emergency cases we have had effective anesthesia without any special preparation. The evening before the operation a hypnotic (as phenobarbital, barbital) and a cleansing enema is given. It is preferable not to give an enema on the day of operation as the fluid which remains in the bowel will delay the absorption of the avertin solution. Before the operation a hypodermic of morphine with or without atropine is given as with other anesthetics. Some users of avertin object to the morphine and omit it with equally good results. We believe the morphine injection is probably better as it deepens the avertin anesthesia and helps to lessen the dosage of the supplemental anesthetic. The authors have used both methods with good results.

Preparation of solution: The amount of distilled water required to make a 2½ to 3 per cent solution is heated to 40 degrees C. (104 degrees F.). Particular care is exercised to avoid heating the water above 45 degrees C. (113 degrees F.) as hydrobromic acid and dibromacetaldehyde will be formed when the avertin fluid is added. The required amount of avertin fluid is measured with a pipette graduated in tenths of a cubic centimeter and added to the heated distilled water. The solution is vigorously shaken until all avertin fluid globules have disappeared.

After the so-called "obligatory test" has been performed, the solution is ready for administration. This test is made by taking about 5 c.c. of the prepared avertin solution in a test tube and adding two or three drops of 1-1000 aqueous (not alcoholic) solution of Congo red. A pure orange-red color will appear, provided the solution has not been overheated; if the color on the other hand changes to violet or blue the solution should be discarded, as it has decomposed and is toxic.

Administration of avertin: The solution is administered rectally about twenty or thirty minutes before the scheduled time of operation, preferably in the patient's room. A quiet darkened room is suggested, but satisfactory results have been obtained without these refinements. The patient should be turned on the left side with the hips elevated slightly by the use of a pillow. The injection is usually made by gravity at a moderate rate of flow, using a funnel and a small rectal tube or male catheter (No. 20-22 French). In children and infants where there is crying with its accompanying increased intra-abdominal pressure, the solution is given by injection, using a urethral syringe. The catheter or a gauze compress over the anus is held in place until the child is asleep. In adults the tube is removed after the introduction of the solution and the patient is not disturbed until sleep occurs. The solution should not be allowed to cool, as it will crystallize, then the solution is not as effective and should be discarded.

Supplemental anesthesia: After the patient has been transferred to the operating room, if reflexes can be elicited, a little ethylene, nitrous oxide, ether, or local anesthesia may be administered before making the incision. The amount of the inhalation anesthetic employed during the entire operation is reduced by 50 per cent or more. We have never combined avertin and spinal anesthesia.

Treatment of over-dose: We do not feel that we have given an over-dose in any case, though three patients did not require any supplemental anesthetic. We took frequent blood pressure readings on all adult patients, and have noted a slight fall in the systolic pressure. If there is an early decided fall in blood pressure it may be treated by the use of adrenalin hypodermically. When there is an early and rapid narcosis in the first ten minutes, it is well to pass a rectal tube and withdraw as much of the avertin solution as possible. This procedure would be without avail after the solution had been administered for twenty minutes or more, due to the rapid absorption of avertin.

If further symptoms of over-dosage should develop, these may be combated by the use of ephedrin, adrenalin, caffeine and 5 per cent dextrose intravenously to hasten the elimination of the avertin by the kidneys. Carbon dioxide and oxygen may also be used to stimulate the respiratory center.

Indications

Avertin has been used in a wide variety of general and special surgical conditions as the following 127 anesthesias will show:

Plastic and neoplastic operations (chiefly of face, mouth and neck)	42
Urological operations (including four nephrectomies and one case of bilateral transplantation of ureters in complete exstrophy of the bladder in a girl of four years with satisfactory recovery)	10
Gastro-intestinal and biliary operations	22

Abdominal gynecological operations	14
Vaginal gynecological operations (vaginal hysterectomy, perineal repair, etc.)	17
Thoracic operations	2
Breast operations (radical and simple amputations)	8
Hernia operations (inguinal and ventral)	4
Exophthalmic goiter operations	4
Tonsil and adenoid operations	3
Bone graft operation	1

In this series twenty-four operations were performed on children (under twelve years of age) with fourteen operations on children under four years of age, with five under six months. The youngest was two and one-half months and was operated on successfully for cranial hydroencephalomeningocele. Eight patients were over sixty years of age, with the oldest seventy-three years old. Avertin is not recommended as a routine general anesthetic but it can be used to great advantage in properly selected cases, especially in hyperthyroidism, in nervous and apprehensive patients, in the presence of cardiac and pulmonary complications, in nearly all pediatric surgery, in operations about the face, mouth, palate and throat where formerly a colonic oil and ether anesthetic was used. Avertin has been found greatly superior to any and all of the many ether concoctions generally given by rectum.

Contra-Indications

We feel that positive contra-indications to the use of avertin are ulcerated lesions of the rectum or colon, advanced diseases of the liver and kidneys. Other definite contra-indications are marked cachexia, advanced pulmonary tuberculosis and myxedema.

Extreme caution in the dosage should be exercised in administering avertin to elderly, debilitated, dehydrated and obese persons. Even greater caution should be exercised in dealing with emaciated patients where there is a deficiency of glycogen in the liver, which consequently reduces the capacity of the patient in the detoxication process.

Summary and Conclusions

An analysis of a series of 127 operations and observations over a period of one year with avertin as a basal anesthetic is presented. Its value in pediatric surgery is particularly noteworthy, with twenty-two operations on children and infants, the youngest being two and one-half months.

Anesthesia can be induced by the rectal administration of avertin in an almost ideal manner. The post-operative course is more smooth and pleasant than with other general anesthesias. Used as a basal anesthetic supplemented with ethylene, nitrous oxide, ether, or procaine locally, avertin introduces to surgery and its allied branches a better and safer era in the field of general anesthesia.

Note:—The authors wish to express their appreciation for the help and cooperation of Drs. J. Shelton Horsley, Austin I. Dodson, Emanuel U. Wallerstein, Guy W. Horsley, and Miss Clifford Matthews, R. N. A., in the clinical observations of some of the cases in this series.

References

1. Bloomfield, J., and Shipway, F. E.: The Use of Avertin for Anesthesia, *Lancet* (London), I:546-549 (March 16), 1929.
2. Idem: *Lancet* (London), II:978 (November 9), 1929.
3. Bruger, M., Bourne, W., and Dreyer, N. B.: Effects of Avertin on Liver Function, *Am. J. Surg.*, IX:82-87 (July), 1930.
4. Edwards, G.: Avertin Narcosis, *Brit. M. J.*, 2:713-714 (October 19), 1929.
5. Guttman, J. R.: Rectal Anesthesia with Tribromethylalcohol, *Ann. Surg.*, 90:407-414 (September), 1929. (Large European bibliography).
6. Idem: Rectal Anesthesia with Tribromethylalcohol, *Am. J. Surg.*, IX:70-73 (July), 1930.
7. Lederer, F. L.: Tribromethyl Alcohol in Otolaryngology, *Am. J. Surg.*, IX:78-81 (July), 1930.
8. Reed, C. B.: Avertin Anesthesia in Obstetrics, *Am. J. Surg.*, IX:76-77 (July), 1930.
9. Speidel, F. G.: Avertin Basal Anesthesia, *Am. J. Surg.*, IX:73-76 (July), 1930.
10. White, C. S, and Kreiselman, J.: Tribromethyl Alcohol (Avertin), Anesthesia, *Surg. Gynec. Obstet.* LI:361-365 (September), 1930. (Complete bibliography in both English and foreign languages).

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Discussion of Papers on Avertin by Drs. Goldman, Dix and Horsley, Jr.

Dr. J. Shelton Horsley, Richmond: One of the best features of avertin anesthesia is the absence of recollection of a disagreeable experience. If the patient can go to sleep in his room, following the insertion of a little tube in the rectum and with but little other anesthetic or sometimes no other anesthetic, and not have the conscious experience of entering the operating room, putting on a mask, etc., you have won that patient's eternal gratitude. Too frequently we overlook the psychic effect. After all, none of us lives forever. That is not a very original observation, but just the same it is true, and most of our conscious life as we get older consists of memories of past things. And if the memories are of the events that are disagreeable, or horrible, to some extent they affect our whole after life; and I think this point, with people who deal with material, organic pathology, as surgeons do, has often been neglected. I am very

enthusiastic about this anesthetic under proper limitations, where carefully administered.

Dr. Hugh H. Trout, Roanoke: Three observations, I think, on avertin are worth presenting. For several years we used ether in the rectum on our thyroid work, but were very often not able to fool the patient, particularly if the patient was a nurse or doctor; they could smell it. With avertin we can get it in the rectum without the patient's knowledge.

Second. When the Germans first started this work with avertin there was a good deal of talk about rectal irritation, so when it was brought to this country we were a little worried about rectal irritation. We had two cases in Roanoke, one of them with a pretty severe rectal reaction. Looking around for the cause, we found they were thyroid patients, and we found it was not due to the avertin at all, but due to the fact that we were using Lugol's solution after the operation, which produced a chemical reaction in the rectum. So, if you are going to use Lugol's solution after operation, be sure to wash out the rectum very carefully.

In our work with pulmonary tuberculosis, the third point is, we prefer ethylene to avertin. With avertin, the patient stays asleep for some hours after operation, and if there is any collapse of the lung, either from phrenicotomy or thoracoplasty, the patient is more apt to aspirate infected material from the bad lung into the good lung, if asleep, than if they awaken rapidly, as they do after using ethylene.

Dr Charles S. White, Washington, D. C.: I wish to congratulate the essayists on their papers. They covered the subject very fully, carefully, and I think honestly—which I think is not always true in an essay.

We have had about one thousand cases, with no deaths and no cause for alarm. It might be wise to stress the dangers, if any, rather than the advantages. Avertin was the first anesthetic introduced, I think to make things easy for the patients; most of them were introduced with the idea of making things easier for the doctors.

Now, about the bad features, if any. We have had no bad consequences. We have tried to observe the rule about ulceration of the rectum, etc. We have tried it in carcinoma of the liver, and the patient got along as well as with any anesthetic, except his delirium was longer, which might be expected. Anesthetists do not like it so well, because it takes longer. They have to get to the hospital twenty minutes before the operation and stay until it is thoroughly over. Nor do nurses like it so well, because they have to stand right by the patient. The nurse or anesthetist must sit by the patient for an hour and a half. It requires a full-time anesthetist, and careful attention.

It is a fine anesthetic if you want to operate on animals in experimental work. You have to give about four times the dose for a human being.

We give much less than the Germans have recommended—150 milligrams; we give 75 to 80.

For alcoholics it is excellent; they go to sleep quietly and wake up quietly.

All in all, it is a wonderful anesthetic.

Dr. Dean B. Cole, Richmond: I have been very favorably impressed with avertin. The first person I saw it administered to was a patient of ours on whom Dr. Johns did a cardiolysis. Avertin has been used on a number of our patients, many of whom had advanced tuberculosis, and without exception they have gotten along well. As a matter of fact, I have not seen any bad results from avertin, and all our patients to whom it has been given are greatly pleased with it. For serious chest surgery it is certainly preferable to ether, chloroform, ethylene or spinal anesthesia.

Dr. James W. Reed, Norfolk: I wish to make only a few remarks concerning avertin anesthesia from my personal experience with it. In the old days I was given chloroform; more recently I had ether, and still more recently I took gas-ether anesthesia. Within the last thirty days I was given avertin anesthesia for a right serious major operation, which it took two hours to perform. To me it was smoothest of all—free from nausea and vomiting, the after effects were pleasant, absolutely no disagreeableness to it, which is so characteristic of the inhalation method of administration. I had thought chloroform one of the most pleasing anesthetics to the patient, on the receiving "END," but avertin is in my opinion far superior.

One point I should like to make is this. It has been recommended as a routine anesthesia in obstetrics by each of the essayists whom we have just heard. This I wish to condemn, as no drug so potent as to induce complete anesthesia (as in my case, I understand), in from three to five minutes, should be used indiscriminately by the general practitioner, without a skilled anesthetist.

MATERIAL MEDICINE.
(A Corollary and a Converse of "Medical Jazz" by Dr. Roy K. Flannagan, Assistant Director of Health for the State of Virginia.)*

By WM. O. BAILEY, M. D., Leesburg, Va.

It would be presumptuous for me to make the assertions which I shall make here today, if this were a mere matching of abilities. But it is not. The humblest citizen in all the land when clad in the armor of a righteous cause, is stronger than all the hosts of error. This is plagiarism but the gentleman from whom I have borrowed these words, were he here, would smile upon me with his smile of broad benignity when he realized the laudable purpose to which I have dedicated their use.

A renaissance is upon us; unconceived, unheralded, undedicated but, nevertheless, here. Upon the wings of lightning it has spread over the whole length and breadth of the land. It has left nothing untouched in its passage. It is for us to perpetuate it.

The practitioner of old who, like some aboriginal animal, scaled the muddy hillsides on his errands of mercy, is gone. No longer shall his tired body move in synchronous rhythm with the clatter of his weary horse's footsteps and the jerky motions of his vehicle. But the beauty and the comforting solicitude of his iridescent nature will never fade. Father, guide and counsellor, he was the shield and buckler of the body politic. His life is an inspiration

*Read at the sixty-first annual meeting of the Medical Society of Virginia, in Norfolk, October 21-23, 1930.

and an ever-burning beacon to the new individual who struggles to the threshold which he has just vacated.

This new individual arrives under different conditions; he faces different foes; he is beset by a variety of complexities:

(a) Intrinsically, the same imperfections and vices common to other men—malice, avarice, hatred, jealousy, cupidity, dissimulation, and their kindred; and reprehensible nod of disdain toward or disapprobation of his brother practitioner, which is often more spiteful, more bitter and more malicious than vehement denunciation or flaming anathema.

And imperfections and vices not common to other men—the crime of the repeating physician, the anguish-producing alarmist, and the meretricious narcotic and liquor pad.

(b) Extrinsically, (1) the dispensors and vendors of medicine, (2) the cults—therapeutic and religious, (3) life extension institutes, (4) radio medicine, (5) the free clinics and hospitals in which he himself serves, (6) state and federal governments, (7) the trained nurse, and (8) the midwife.

This newcomer, fresh from the cloister of the high grade medical school, credulous, trustful, charitable; unschooled and unskilled in the hypocritical artifices of the so-called advance of civilization, must, at the outset, be a master of polemics. Disputations, jealousies and organized and unfair competition threaten him on all sides. But, with these polemics, must be commingled all the virtues of a superman.

But who tells him all this? No one, of course!

Through years of bitterness and surprising revelation he must glean these truths for himself. Bewildered, uncertain but ever trustful, usually he applies himself to his profession with renewed faith and increased vigor, forgetting that he has other responsibilities for which he may be held liable.

A physician's responsibilities do not begin and end with the sick bed. They are diverse; (a) conjugal, (b) paternal, (c) religious, (d) civic and (e) medical. To be a good physician the first four must be a prelude.

But how many realize this and comport themselves accordingly?

To meet these new and changing conditions a critical survey is imperative. First, he must know: (a) Where medicine may be practiced, (b) How medicine may be practiced, and (c) Its pecuniary aspects (cost of production and distribution.)

(1) The federal government offers its civil and military services; the states their public health and other civil services. (2) Civil practice, special and general in the towns and country. (3) Industrial. (4) Insurance, and (5) Miscellaneous sources such as ship's doctor, in mines, etc., constantly are opening up new fields.

From a pecuniary aspect the physician should know of the prospective neighborhood: (1) its population, (2) their wealth, aggregate and per capita, (3) the number of physicians per population, (4) their average collective and individual net income, and (5) the cost of production and distribution of his product.

But who tells him this? Again, nobody.

Is it wrong for a physician, assailed and threatened on all sides, to make a critical survey of the foes arrayed against him? Is it wrong for him to meet these conditions, inimical to his interests as husband, father, citizen and churchgoer, simply by enforcing the same sane business organization which other business men throughout the world have found it necessary to apply to their businesses, and the churches everywhere to their businesses?

Is there any ecclesiastical basis for our obstinacy?

The parable of the sower who went out to sow; the laborer who came into the vineyard at the eleventh hour and received his penny; and the servant who burned his talent of silver, throw back their damaging and unequivocal refutation. The tranquil mind and the serene brow of the Divine Man of Galilee were never ruffled more than by inequity. He would heartily disapprove of the conduct of our medical business. He would be the first to throw the money changers of patent medicine out of our temples of health.

Will the heart of man be changed by the proposed alteration in our methods?

Two years ago, while in post-graduate study on the Continent, during my spare moments I trailed through many of the picture galleries of the Old World. I saw numerous masterpieces of art, conceived and executed during the centuries which had preceded me. Millions of people had stood before them, in wrapt amazement, awed wonder and grateful appre-

ciation, just as I stood. Vice was seldom painted and then only to make virtue, in contrast, more luminous and beautiful; nothing was painted but those things which raise men to a higher spiritual level and inspire good in them.

Could the hearts of the men who conceived these masterpieces of virtue, love, and reverence, and those who padded by in silent adoration of them be very evil? Will we, because we emulate other men in other walks of life, dealing with the same public whom we serve, become suddenly transmuted into predatory human beasts? The history of the centuries does not say so.

The whole question, it seems to me, is not what the past has been or what the future may be; not whether we are more virtuous and less permeated with the sins and imperfections of other men; not whether we are honest, idealized and worthy or unworthy of the affection and the adulation of an idolatrous public, but whether we are right.

And to be right:

(1) We must confer with all the dispensors and vendors of medicine in this great Commonwealth to minimize the evils of their traffic both to the public and the physician.

(2) We must entertain an attitude of sympathy and understanding for the ignorance of the religious and therapeutic cultist endeavoring, by a revelation of the truth, to win them to us, at least to a point where they do not affect adversely the health of the community.

(3) Similarly, we must control life extension institutes, radio medicine, and their kindred, revealing the truth, battling for the right, invoking the law, where there be laws, as little as possible.

(4) We must, in our schools, define a physician's responsibilities and impress the fact that these responsibilities are a prelude to, and, at least, coequal with, medical responsibilities.

(5) We must have a strong central state organization, i. e., our efforts, both professional and material, must be centrifugal rather than centripetal as they now are. Between the county and state organizations there must be strong intermediary links.

(6) We must emancipate the five hundred odd thousand women and children of medicine from our offices and telephones.

(7) We must realize that, adhering to the old traditions, we have a perfect right to accrue in accordance with our worth.

(8) We must impress upon the communities in which we live that charity cases are the responsibility of the community and its taxpayers and not of the medical profession.

(9) We must make a critical analysis as to Where, How, and What pecuniary aspects has the practice of medicine and place this squarely upon the shoulders to which it belongs—the medical school.

(10) We must definitely control the supply and distribution of physicians insofar as they can be controlled by sensible advice and judicious cooperation.

(11) We must have a fee table for the state and no physician shall be discriminated against because he happens to settle in the country.

(12) We must use the press freely in telling the people the truth about themselves but only by organized authority.

(13) We must support the Director of Health in his efforts to stamp out contagious and infectious diseases and support him in his other laudable efforts.

The Great Commoner, in one of his most celebrated and illuminating addresses, spoke these words:

"Muelbach relates an incident in the life of the great military hero of France. At Merengo, the Man of Destiny, sad and disheartened, thought the battle lost. He called to a drummer boy and ordered him to beat a retreat.

"The lad replied: 'Sire! Desaix never taught me to beat a retreat. But I can beat a charge. Oh! I can beat a charge that will make the dead fall into line. I beat that charge at the Bridge of Lodi; I beat it at the Pyramids; I beat it at Mount Tabor; Oh! may I beat it here!'

"The charge was ordered, the battle won, and Merengo was added to the victories of Napoleon."

If only the County of Loudoun could be our Merengo! If only I could be the humble drummer boy who beats the charge which makes the slumbering, though not the dead fall into line! If only this distinguished and perspicuous society could be our gallant leader who, in the face of an enemy, no matter how proud and how defiant, will never waver.

Discussion

Dr. J. Allison Hodges, Richmond: Mr. President, I shall say just one word, because I know the exigency of the hour. That is this: Dr. Bailey, from the country, a country physician, has sounded a word to us all that certainly should bear fruit. It seems to me that we now have made arrangements and are growing in our capacity of organized medicine to take care of every man in the State of Virginia; and I believe that this society simply wants to know how it can be of help, wants to be able to be of help, and it will render that service.

MULTIPLE PRIMARY CARCINOMA: REPORT OF FOUR CASES.

By CARRINGTON WILLIAMS, M. D., F. A. C. S., Richmond, Va.
McGuire Clinic.

The occurrence of more than one primary carcinoma in one individual is of sufficient rarity to justify recording such cases.

Billroth's postulates for the diagnosis of multiple carcinoma (quoting Eichbaum[1]) are:

1. Both carcinomas have a different anatomical structure.
2. Both carcinomas can be traced histogenically from the epithelium of the parent tissue.
3. Both carcinomas have their own metastasis.

The first postulate has been criticized as unfair by a number of authors including Eichbaum[1] although his cases conform to them. The same is true of Fried[2] who recently reported two cases. He says, "These requirements can rarely be fulfilled. In the first place, two tumors originating in the same system of tissue, as in different parts of the intestines, may not vary in structure; in the second place, it is oftentimes impossible to trace the point of departure of a tumor in an advanced stage of its growth; and finally, the third postulate can be complied with only when each respective tumor gives metastases of its own." These objections are in many cases perfectly justified, as in the case of Kuster (quoted by Mandry[3] that of a woman who had carcinoma of each breast with an interval of one year and each carcinoma was of different type.

On the other hand Herly[4] reported, as an example of multiple primary carcinomas, a man who had an epithelioma of the penis and later two epitheliomas of the tongue. The epitheliomas of the tongue were of the same type and occurred simultaneously and should more properly have been considered as the same growth in spite of the fact that they were separated by apparently normal tissue. Others have reported carcinomas of the cervix and body of the uterus; carcinomas of the pylorus and cardia of the stomach; multiple carcinomas of the skin of the face. Where the growths are so closely associated anatomically and in time of occurrence, it would seem that they should be considered as one, even though histologically they may differ.

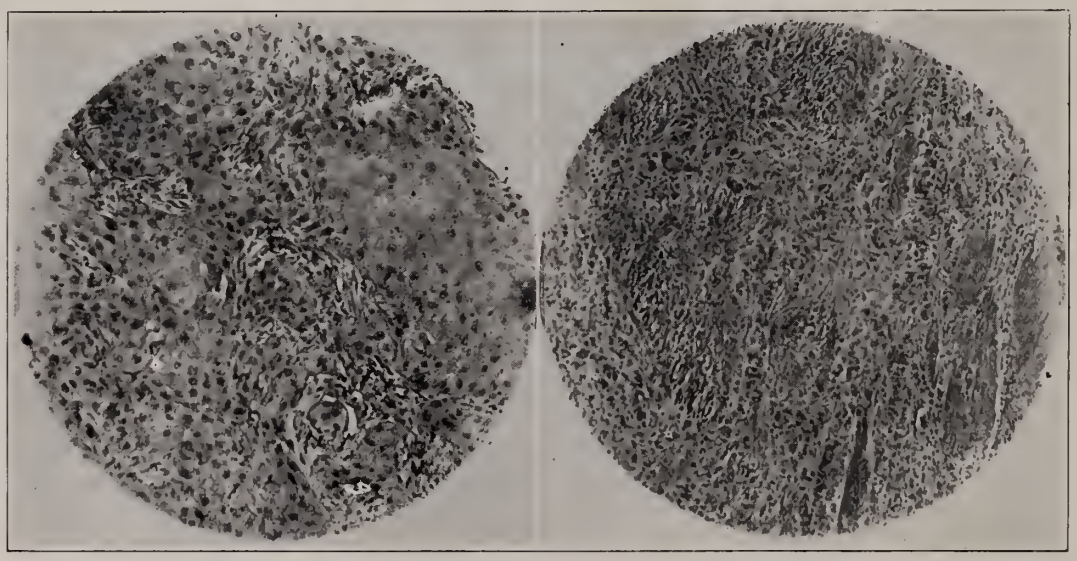

Fig. 1.—Case 1. a (on left). Epidermoid carcinoma of the tongue. b (on right). Adenocarcinoma of the stomach.

The four cases which have been observed in the McQuire Clinic are as follows:

Case 1. Male, age sixty-nine, epithelioma of the tongue with metastasis to glands of the neck; adenocarcinoma of the stomach.

Mr. W. L. B. entered St. Luke's Hospital on July 23, 1919, on account of an ulcerated growth on the under surface of the tongue, of several months' duration. The growth was excised with cautery and the pathological diagnosis was epidermoid carcinoma. (Figure 1-a). The description of the specimen was: "The tissue is from an ulcer on the under surface of the tongue and floor of the mouth in the midline. Microscopic examination shows a very active squamous cell epithelioma. The cells are vegetative, hyperchromatic and show a low-grade of differentiation."

The wound healed and he felt well for two months when he noted fullness in the stomach after eating. He ate very little on account of this distress and began to lose weight. There was no epigastric pain, no nausea nor vomiting, and no blood in the stool. Physical examination revealed a small, movable mass in the epigastrium and X-ray examination confirmed the diagnosis of carcinoma of the stomach. He entered the hospital October 12, 1919, and at operation the pyloric portion of the stomach containing the tumor was resected and the defect repaired by the anterior Polya method. The pathological diagnosis on the tumor was adenocarcinoma of the stomach (Fig. 1-b) and the description of the microscopic section was: "A portion of the stomach with a growth in the region of the pylorus. The growth is invasive and shows nodular extensions in the wall of the stomach. Microscopic examination shows a typical pattern of an adenocarcinoma in the submucosa, but in the deeper structures this arrangement is somewhat lost and the cells string out in long columns following in their growth the lines of least resistance between the muscle and connective tissue fibres. The neoplastic cells are very active and hyperchromatic."

Following this operation he gained weight and felt well for six months. He then noted a stiffness of the neck and soon found a small nodule in the anterior triangle on right side of neck. This nodule gradually increased in size until he entered the hospital again on April 13, 1920. The gland was described as about a half inch in diameter located opposite the larynx in the anterior triangle on right side of neck. It was fixed in position. There were a number of small soft glands in the posterior triangle of the neck and on the opposite side. The site of the epithelioma of the tongue had healed and there was no evidence of recurrence. His abdomen was soft and the function of the stomach excellent. At operation the hard gland was removed and radium needles inserted. The pathological diagnosis was epidermoid carcinoma.

He then remained well for several months only to return to the hospital on September 25, 1920, with a recurrence in the glands on the right side of the neck. The growth was necrotic and friable, it was partially removed and radium again inserted. The growth in the neck continued and he died from this in a few months.

Case 2. Female, age forty-nine, adenocarcinoma of the breast; adenocarcinoma of the ovary.

Mrs. S. S. W. first entered St. Luke's Hospital in 1923 when both tubes, the left ovary and the uterus were removed on account of pelvic inflammatory disease. She entered the hospital again May 7, 1925, complaining of lump in the right breast. Her age at this time was forty-nine years. She had had a small nodule in the right breast for fifteen years, said to be an "obstructed milk duct" and no change had been noted in this nodule. Three months before this she first observed a small mass in the right axilla which had grown in size. Very recently several other small masses had appeared in the axilla. Radical amputation of the breast and axillary contents was done on May 8, 1925. The pathological diagnosis was adenocarcinoma of the breast with metastasis in the axillary lymph nodes. (Figure 2-a.) The description of the specimen was: "Large breast, with axillary tissue and pectoral muscles, that shows a tumor 3x2x2 cms. The growth is hard, cartilaginous, translucent, non-encapsulated. There are numerous metastatic nodules in the axilla, some as large as a robin's egg, or larger. The breast tissue surrounding the growth is probably more fibrous than the breast structure elsewhere. Microscopic examination shows a typical adenocarcinomatous pattern. The tumor cells are particularly active and vegetative in character. The cells are invasive and the lymphatic ducts are filled with plugs of very malignant neoplastic cells. The connective tissue is very cellular. There is considerable round cell infiltration about the groups of neoplastic cells. The metastatic glands are more cellular than the original growth and the adenomatous pattern cannot be made out. There is a diffuse mastitis in the breast tissue surrounding the growth."

She returned to the hospital July 6, 1926, on account of a tumor in the lower abdomen. There had been no evidence of recurrence of the breast cancer. Pelvic examination indicated that the tumor was a cyst of the ovary and she was operated upon July 7, 1926. A cystic mass arising from the remaining ovary was found densely adherent in the pelvis. This tumor was removed and reported by the pathologist to be adenocarcinoma of the ovary. (Figure 2-b.) The description of this tumor was: "The ovary is large and cystic measuring 9x6x6 cms. It is somewhat irregular and nodular in outline. The ovary is composed of one large pseudomucinous cyst with numerous smaller cysts. The partitions between the cysts are very thick and myxomatous in character. Microscopic examination shows a typical pattern of an adenocarcinoma. The cells are hyperchromatic and are very large. There is a decided tendency for the cells to be invasive and numerous cell nests are to be seen in the stroma. The stroma is hyperplastic. The contents of the cysts consist of degenerating cells, a little blood and a pseudomucinous material."

For about three years after this the patient remained well. Recently she has had pain in the lower abdomen and irritation of the bladder. She entered the hospital again June 16, 1930. Pelvic examination now reveals a hard, fixed, tender mass in the pelvis which is doubtless a recurrence of the ovarian tumor.

Case 3. Female, age forty-seven, comedo carcinoma of the breast; adenocarcinoma of the rectum.

Mrs. I. G. B. entered St. Luke's Hospital November 12, 1929, complaining of lump in right breast which had been noticed first about six months previously.

Radical amputation of the breast and axillary contents was done and the pathological diagnosis was comedo-carcinoma of the breast. (Figure 3-a.) The description was as follows: "Large breast, with axillary tissue and pectoral muscles, that shows a tumor in its upper and outer quadrant measuring 3x3x3 cms. The tumor is hard, cartilaginous, non-encapsulated. Numerous comedones appear on the cut surface of the growth when growth is pressed. The tissue surrounding the growth is fibrous and compressed by the expanding growth. There is no axillary invasion. Microscopic examination shows the ducts of the growth to be widely dilated and lined by large epithelial cells and filled with necrotic material. The tumor cells are invasive and some of the small

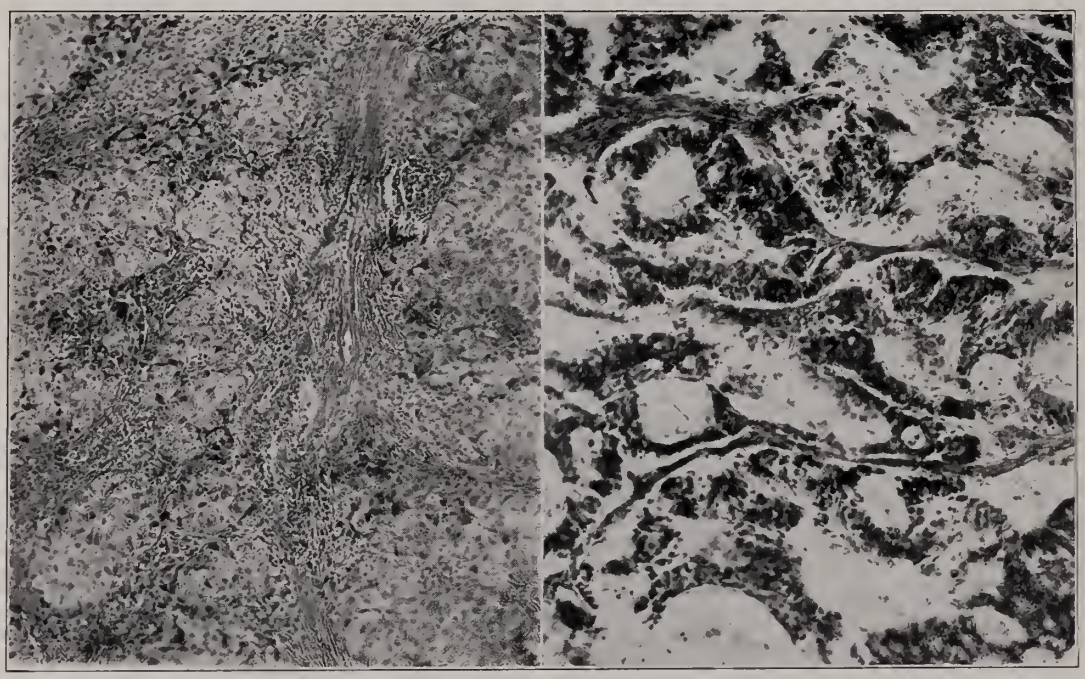

Fig. 2.—Case 2. a (on left). Adenocarcinoma of the breast. b (on right). Adenocarcinoma of the ovary.

lymphatic ducts are filled with plugs of neoplastic cells. The connective tissue is very cellular."

She returned May 15, 1930, complaining of bleeding from the rectum first noticed two weeks before. Proctoscopic examination revealed an elevated ulcerated mass on the posterior wall of the rectum at the junction with the sigmoid. X-ray examination after a barium enema confirmed this examination.

She entered Memorial Hospital where a two stage resection of the rectum and lower sigmoid was done, leaving a permanent colostomy. Pathological diagnosis on this tumor was adenocarcinoma of the rectum. (Figure 3-b.) The description of the mass was as follows: "Anus and rectum 16 cm. long received, opened longitudinally revealing an ulcer 4 cm. in diameter having indurated, elevated, and rounded margin, and an indurated base covered by a soft gray necrotic material. The ulcer has a depth of 8 mm. Lymph glands and attached fascia and muscle are partly hemorrhagic but otherwise present nothing of note. The plane of excision at proximal extremity is somewhat macerated; an adjacent artery is filled with coagulated blood. Microscopic examination shows that profuse infiltration of submucosal and muscular strata, extending into serosa, of atypical glandular groups of anaplastic columnar epithelium, is found in margin and base of ulcer. Necrosis and inflammatory infiltration are marked in fascia of mid-portion, in ulcer zone. Neoplastic infiltration is not seen in fascia or muscle free from lymph glands. Metastasis is observed in one lymph gland in ulcer zone, but not elsewhere."

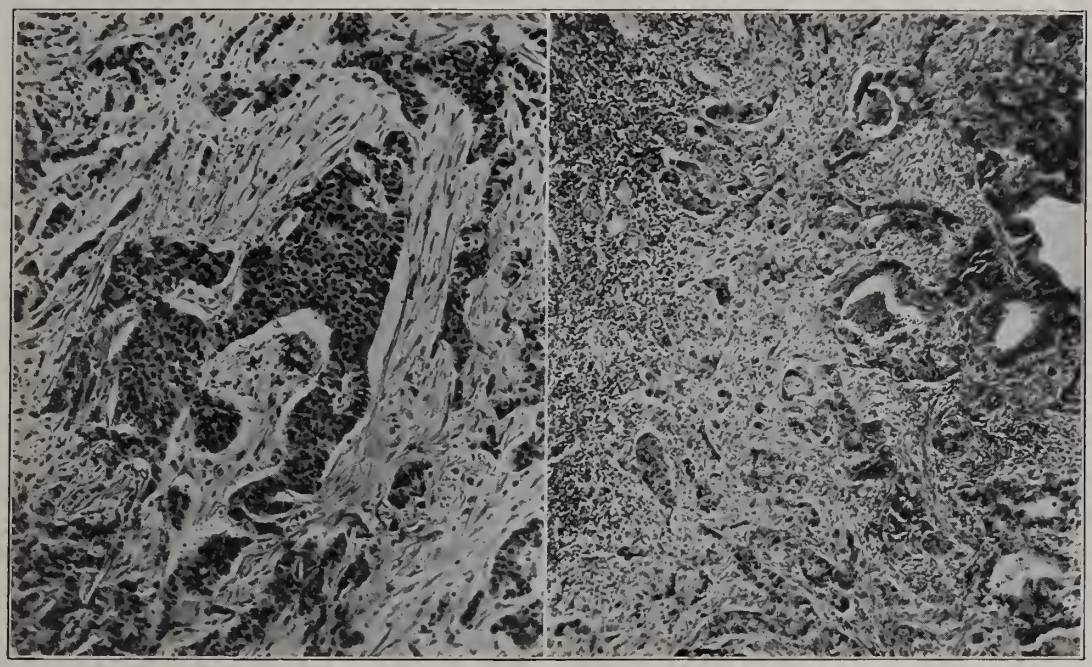

Fig. 3.—Case 3. a (on left). Comedo-carcinoma of the breast. b (on right). Adenocarcinoma of the rectum.

Case 4. Female, age twenty-nine, comedo-carcinoma of the breast; medullary carcinoma of the ovary.

Mrs. T. G. entered St. Luke's Hospital on October 21, 1926, complaining of a lump in the right breast which had been present for about six months. Radical amputation of the breast and axillary contents was done. The pathological diagnosis was comedo-carcinoma of the breast with metastasis to the axillary lymph nodes. (Figure 4-a.) The description of the specimen was as follows: "Right breast: there is a growth in the upper and outer quadrant of the breast measuring 2x2x1 cms. The growth is non-encapsulated, hard and grey in color. On pressure caseous plugs (comedones) appear on the cut surface. There are a few shot-like glands in the axilla. Microscopic examination shows the growth to originate from the ducts rather than from the acini. The ducts are large, dilated, and lined

by several layers of active, hyperchromatic cells. In the center of the ducts is a necrotic material. The cells have broken through the basement membrane and plugs of them are to be seen in the neighboring lymphatic ducts. There are numerous tumor-cell implantations in the axillary glands."

The patient was admitted to the hospital again June 17, 1929, complaining of excessive menstruation and examination revealed a large ovarian cyst on the right side. At operation this cyst was removed and the left ovary was found to have a solid tumor and was also removed. The pathological report on the large ovary was benign cyst, while on the small tumor it was medullary carcinoma. (Figure 4-b.) The description of the specimen was as follows: "The ovary is small: it measures 3x3x2 cms. The capsule is thick, scared and fibrous. On cut surface a few very small cysts are seen. The bulk of the ovary is solid, firm, and yellow-grey in color. The yellow, however, is of a different tint from the yellow seen in corpus luteum bodies. Microscopic examination of the ovary shows a very cellular tissue. The cells are small, spheroidal and granular, and are separated into groups by a mucinous stroma. The tumor cells throughout are hyperchromatic and there are to be seen numerous mitotic figures."

This patient did well for a few months after leaving the hospital. She then developed metastases in the liver, apparently from the breast carcinoma, and died in April, 1930. Post-mortem examination was not done.

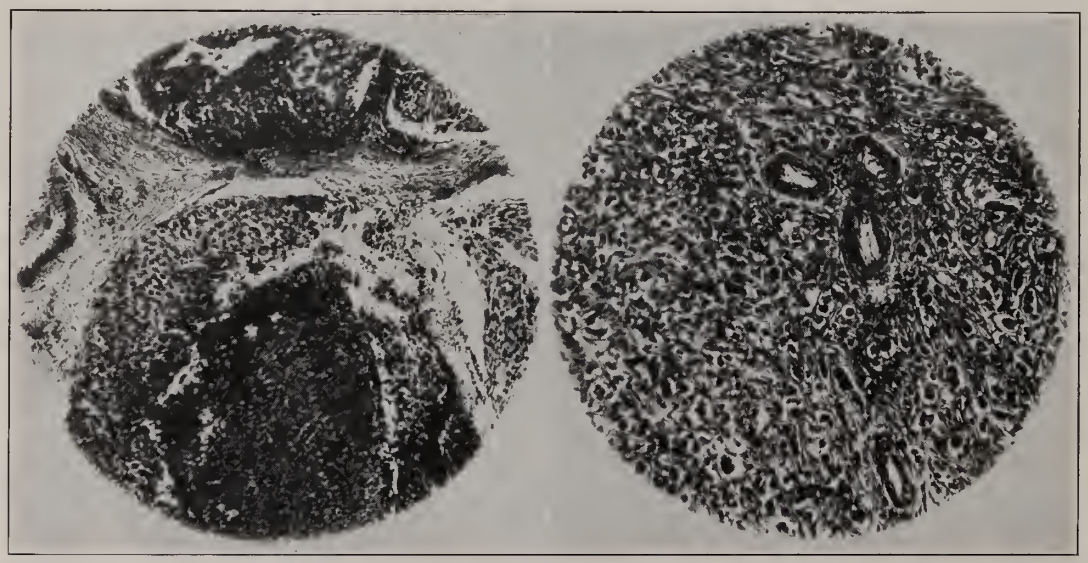

Fig. 4.—Case 4. a (on left). Comedo-carcinoma of the breast. b (on right). Medullary carcinoma of the ovary.

Comment

These cases are presented each having two primary carcinomas widely separated anatomically. There is no suggestion in any case that there could have been any immunity conferred by any of the growths. The first case, tongue and stomach, and the second and fourth cases, breast and ovary, suggest some systemic physiologic influence; but the third case, breast and rectum, has no such relationship. It is interesting that the breast tumor in the second case was noted fifteen years before there was any suggestion of malignancy, and the ovary which was the seat of a malignant growth was left as a normal ovary when hysterectomy was done three years before. If the apparently innocent breast tumor had been removed some years ago and the ovary had been taken with the uterus, she might have remained well.

The appearance of the second tumor in the first three cases was that of an advanced growth although the interval between operations was three months, one year, and seven months, respectively. It is very likely that both malignant growths were present in each case at the time of the first operation. In the fourth case, however, the operations were separated by three years and the ovarian tumor was without doubt an early one.

It is easy to understand that a patient confronted with a malignant growth in one part

of the body would give a history so centered on this part that other ailments would be forgotten. It is also easy for the surgeon who finds a malignant growth to minimize complaints from other parts. The possibility of two malignant growths widely separated anatomically should be sufficient to put the examiner on guard lest an important lesion be overlooked in the general examination.

BIBLIOGRAPHY

1. Eichbaum, R.: Multiple Primary Carcinoma, Inaugural Dissertation, Greifswald, 1904.
2. Fried, B. M.: Primary Double Cancer. *Arch. of Path.*, 5:565. 1928.
3. Mandry, G.: Symmetrical Primary Carcinomas. *Beitr. Z. Klin. Chir.*, 8:589. 1891.
4. Herly, L.: Multiple Primary Cancers, with Report of Case. *Arch. Surg.*, 9:204. 1924.

WHITHER ARE WE DRIFTING AS A PROFESSION? SOME FACTS WORTHY OF OUR CONSIDERATION AS LOYAL PHYSICIANS.*

By BITTLE C. KEISTER, A. M., M. D., Washington, D. C.

A distinguished statesman once remarked before a great audience, "Two things grow better with age, namely: '*Wine and Judges.*'" Can we not apply this analogy to our great old Science of Medicine? Are we as a great profession keeping up the high standard set by our fore-fathers and making the necessary progress to meet the demands of the twentieth century requirements? Or, are we drifting into the by-ways, new specialties of get-rich-quick, advertising schemes, thus compromising our professional calling with the trades-unions, industrial insurance companies, the pseudo-sciences, such as the eclectic, chiropractic, osteopathic, faith-healers, etc.? It is a well-known fact that these so-called sciences are rapidly filling our country and spreading their false doctrine into every community, like the "Communists of Russia," sowing seeds of superstition and ignorance among all classes with whom they come in contact.

Strange as it may seem, some of our State medical examining boards are being made victims to some of these pseudo-sciences, and are tolerating them in the regular formal examinations of candidates who belong to the regular medical profession. When we consider this state of affairs in our profession, it seems to the writer that the regular medical profession should call a halt on these mixed Boards and require them either to get down and out or turn the whole business over to these pseudo-science associates and their political backers. If I understand the true meaning of the "CODE" of Professional Ethics, as adopted by the American Medical Association, these boards of medical examiners, who admit and sit with these pseudo-science examiners on their regular boards, are deliberately and flagrantly violating the real and outstanding principles of the Code of Professional Ethics, and should be held accountable and debarred from consultation with the regular profession.

I am acquainted with two medical examining boards, one of which is in Minnesota, and the other one in Florida. Both of these Boards are the so-called mixed boards. I may say these two boards are composed of eclectics, homeopaths, chiropractics, osteopaths, with an equal number of what the board designates as allopaths. This last name has become obsolete, and is not used by educated people except for deception and derogatory purposes. In view of the antagonistic feeling that has existed for half a century between the regular medical profession and the four or five psuedo-sciences, it is but natural when a regular M. D. is examined by one of these pseudo-scientific followers, he will not receive justice in his grades. Strange as it may seem, we have a spirit of commercialism in our regular medical profession of this twentieth century that is displayed along many angles, but this spirit is not shown quite so bombastically as those previously mentioned, as pseudo-sciences. We have a few educated M. D.'s who for the sake of the monetary feature, coupled with other conditions best known to themselves, have in a measure abandoned the regular medical profession and aligned themselves with the pseudo-science followers but retain their degree of M. D., which gives them more prestige in their communities and enables them to pass the various examining boards, having been previously taught and drilled in the real essentials of medicine and surgery while taking their regular medical course at a regular medical college.

This drifting tendency on the part of the medical profession is beginning to assume noticeable proportions, and should be taken up and carefully handled by our educators and committees in their respective conferences on Medical Education and Medical Ethics under the auspices of The American Medical Association.

There seems to be a state of discontent, not

*Read by title at the sixty-first annual meeting the Medical Society of Virginia, in Norfolk, October 21-23, 1930.

only in the medical profession, but this sad state of uncertainty exists in all of the professions. It may be accounted for, to a great extent, as a natural sequence of the World War, but is observed more distinctly in the medical profession than any of the other learned professions. Why should this be true in this enlightened age of the twentieth century? In answering this preponderous question, in the writer's judgment, some of the indirect causes have already been intimated in the foregoing comments on mixed examining boards and the various psuedo-sciences that have taken on new life since the World War and are asserting their bombastic propagandism before the uneducated credulous populace. Then too, while all of this seeming conspiracy to undermine our regular medical profession is going on, the populace are taking notice of our culpability in sitting by and taking no steps to correct this unfortunate state of things; knowing, too, that as conservators of the health of the Nation, we should at least show some interest in the education and better enlightenment of the public.

In view of the fact that 33,000 trained, educated physicians and surgeons volunteered their services toward winning the war and shared the hardships of the regular doughboys, we feel that we have a just right in shaping the sentiment and informing the world from an advisory point of view in matters pertaining to the health and general welfare of the Nation. We should also exercise our right in protecting our community from the so-called pseudo-science fakirs, advising our municipal officials, our representatives in our State Legislatures, and our Congressmen, from an educational and scientific point of view, offering them such data as will convince them without prejudice. Shall we continue to cast our vote for men to represent our country in legislative halls, who are too ignorant from a health standpoint or too politic from a pecuniary point of view to do their duty from a sense of right and shield their constituents from becoming a prey to this class of so-called healers, by exempting them from examination on the most vital subjects pertaining to health? Is it not a disgrace for any State to place such a blot upon her legislative record?

As intimated in the outset of this paper, are we holding up the standard of our great science in meeting the demands of the twentieth century requirements? We are confronted by many new and strange diseases as a sequel of the great World War, caused by the intermingling of the foreign nations of European countries, and contracting such diseases as typhus fever, impetigo, trench fever, etc. These new diseases require special treatment. Then we have many other new diseases caused by the new modes of travel by automobile and airship, which have caused more heart disease than any other known cause. It is claimed by good authority that organic heart disease has increased over 40 per cent during the past ten year, due largely to the automobile and airplane. In view of these facts, the demand for skillful medical men who can diagnose and treat these new serious diseases is growing with each decade.

We also have a class of malingerers who are seeking war pensions for supposed injuries received during the great war; many of these did not cross the waters nor smell powder or gas, yet they claim pensions for "shell-shock" and diseases contracted before and after the war. Some of these malingerers are of foreign birth, possibly deserters, and should be court-martialed for disloyalty to their countries. I know whereof I speak, having been called upon to examine a large number of ex-soldiers by the clean-up squad of the Red Cross officials, and it always afforded me pleasure to lend my skill and assistance to a worthy doughboy. In some of the claimants, it required both skill and tact to be able to separate the wheat from the chaff. Some of the malingerers seemed to be victims of "pension neurosis," yet claimed to be shell-shocked, which, in my judgment, is nothing more or less than a modified form of hysteria or "war-fright." If any of these pseudo-science healers had ever possessed any merit in their so-called science, no doubt whatever but they would have been enrolled with the regular profession, at least as helpers in the great war! But alas! they were not needed in the great struggle for victory!

We are all familiar with the founder of osteopathy, Dr. A. T. Still, of Kirksville, Mo., where the parent school of this pseudo-science was planted in the year 1894. On careful examination and investigation by the Governor of Kentucky, for the express purpose of ascertaining the true character of this and other like schools prior to allowing their graduates to practice in that State, it was ascertained from this investigation committee that not one of these schools was equipped for teaching the

first principles of a medical education. This Kirksville school, known as the American School of Osteopathy, is owned and controlled by the A. T. Still family, and is strictly a money-making scheme for the A. T. Still family. This school is the parent of half a dozen others of less repute, located in various sections of the United States, sending out every year hundreds of their unbaked D. O.'s to practice their so-called "manipulation" science on frail, weak humanity.

We may add that the so-called psuedo-science of chiropractic is based on about the same dogmatic principles as that of osteopathy, differing only in phraseology and the use of certain terms by which the D. O.'s distinguish themselves from their allied competitors, the D. C.'s, the former basing their theory on certain forms of manipulation, while the latter use the term "adjustment." The founder of chiropractic is one B. J. Palmer, and is at the head of the parent school, located at Davenport, Iowa. This school is regarded as the mother school of a large number of other similar schools located in various sections of the United States, and, like the osteopathic schools, sends forth its graduates, or half-baked pupils, into all parts of the world, sowing seeds of ignorance, superstition, and fanaticism, reaping as easy prey the credulous weaklings, the maimed and halt, the deaf and dumb, in fact, all comers regardless of race or conditions. And since the World War, it seems that these pseudo-sciences have taken on new life and are swarming the whole country, especially the Southland where the climatic conditions seem more favorable to their zealous propagandism.

I am reliably informed that the Legislature of New Jersey has passed an act requiring all drugless healers and other pseudo-sciences, cults, etc., to pass the regular examinations before the State board before allowing them to do any kind of manipulating practice. Following this legislative action, these drugless healers at once sought other fields, large numbers of whom invaded the Southland. Quite a number have located in Virginia, Georgia, and North Carolina, and other states including Ohio and Kentucky. British Columbia and the District of Columbia are contemplating the solution of this vexed problem in the same way that New Jersey has done, but some of these sections are adding further restrictions, requiring all applicants to be full graduates of a first-class Medical College in addition to their own special knowledge and experience. This, in the writer's judgment, seems to be the real, logical solution of this great American fraud question, and should be inaugurated in every State in the Union, even at the sacrifice of money and time on the part of every true, legalized physician in the United States. The Federal Government expects the regular medical profession to continue to be the guardians of the public health, and, as such, will stand at the back of the profession, provided we will take the initiative movement in the fight, as did the Medical Council of British Columbia. Let's make the grand Old Mother of States start the ball rolling by taking a little more interest in our State politics, electing competent representatives to our State Legislature and Federal Congress, men whom we know to be of the right kind of material, and, at the same time, feel the importance of protecting our civilization as well as the dignity of the regular medical profession from the disgrace and humiliating influence on our present and future generations. When we consider the bold fact of these cults and pseudo-sciences keeping the lobbies of our legislative halls filled with their paid advocates, and keeping on hand a large fund for no other purpose than that of remunerating our weak-kneed legislators who may be interested in their schemes, either financially or otherwise, should we not send a select delegation of our best men to Washington and Richmond, to keep guard over the new medical acts that are constantly coming up before the State Legislature and United States Senate, and meet the opposition in the start, in both the State and Federal Government? I know whereof I speak, having observed the trickery of these pseudo-sciences in Washington about the lobbies, when they were trying to influence some of the senators and representatives in their favor, trying to get separate Boards, so that they could pass the regular Medical Board on their Board Certificates. It is a known fact that these so-called healers and backers have a bunch of the shrewdest lawyers located at certain points in the various States, especially at the various seats of State Government, where they can enact laws to suit their special purpose. To meet all the costs of their propaganda, each graduate of these respective schools is assessed so much on his graduation for the expense of the Board examination and to pay all expenses for

lawyer's fees and for witnesses in securing a board certificate. This rule applies especially to the schools that grant certificates of the D. O.'s and the D. C.'s. It is interesting to note the diversity of the various schools of healing human ills without the use of medicine or surgery, appearing, however, only for a short season and disappearing into oblivion, "like the morning mist on the approach of the noonday sun." We have the metaphysical healers, Divine healers, prayer healers, magicians, theosophy, telepathy, new thought, auto-suggestion, hypnotism, etc., all claiming to possess miraculous gifts or the secret of occult science, a kind of mythical knowledge known only to the few advocates or adherents.

> "Deep truths to others unrevealed,
> Mysteries from mankind concealed."

In many instances these professors and followers are enthusiastic, self-deceived visionaries, while in a great majority of cases they are downright frauds, practicing wholly upon the credulity and ignorance of the patients for revenue only. We are all acquainted with that celebrated mystic of the eighteenth century, "Anton Mesmer," who claimed to possess in himself an occult force derived from the stars which he exerted upon his patients by stroking their bodies with magnets. He, in after years, discarded his theory of "Siderial magnetism," and in the city of Paris practiced upon his patients with manipulation, aided by dimly-lighted rooms and soft music. It is a fact of history that Mr. Mesmer benefited many hysterical women and nervous men whom he treated by what he termed "animal magnetism." Upon investigation by a committee of well-known physicians, appointed by the French Government for the purpose of examining and ascertaining the real facts about this man of mystery, it was quickly discovered that his theory of "Mesmerism" was a downright system of charlantry and jugglery, and that Dr. (?) Mesmer himself was an empiric and impostor of the worst type, and accordingly was driven from France.

From the time of "Hierophant of the Egyptian Temples" down to the present, various sects and cults of pretended cures and healers of human diseases without the aid of medicines have appeared under many and various names, all claiming to possess the power through some mysterious magnetic agency of their own. They operate entirely outside of the jurisdiction of medical science, and in a large measure rest their claims for success upon the credulity and imagination of their deluded victims. In all such instances, however, experience and investigation have clearly shown that these are nothing short of "mystagogs," frauds, and impostors of the worst type.

Our country is today filled with fakirs of all kinds, some of whom date their origin back to the fall of Rome when civilization was in its most chaotic state, while many others, strange to say, belong to our much boasted twentieth century civilization.

We are today facing an evil, a curse that is about as great a menace, if not more far-reaching in its deleterious effects on human health than any of those mentioned above. I refer to that "gigantic patent nostrum evil." The promoters of this curse are of our own woof and blood, and are knowingly deceiving their credulous friends and neighbors wholly for the sake of filling their coffers at the expense of the health and life of their fellowmen. They have strewed over the country in every village or cross-road store, as well as in our town and city drug stores, thousands of so-called cure-alls in the shape of cough and consumption remedies, some of which contain opium and other habit-forming drugs, but under disguised names. Hostetter's Bitters, for instance, contains 44 per cent alcohol; Peruna 28 per cent; Lydia Pinkham's Compound, Ayers' Sarsaparilla, Swamp Root, Wine of Cardui, Vinol, and a host of others, including Tanlac, etc., that contain from 5 per cent to 35 per cent alcohol, are today making drunkards of both sexes of the human race in this and other civilized countries that permit their sale. According to the report issued by the President of the American Proprietary Medicine Association, the sum of one hundred and eighty-one million dollars was expended last year for nostrums.

In concluding this paper, the writer would suggest that a committee of three interested physicians be appointed to communicate with some first-class attorney or member of the House of Representatives to look after the interests of the regular Medical Profession, especially at the time these pseudo-science people are likely to present their claims before the Senate or House of Representatives. I would suggest the Hon. Mr. Owen, of Oklahoma, to champion the cause of our profession.

For ages the Health Officers of Virginia have been waging a war against typhoid fever, tuberculosis, diphtheria, smallpox, malaria, pneumonia, and influenza, all of which result from virulent germs of protozoa, but today the medical profession is turning its attention largely to the evil span of mankind, which is expressed and magnified by the mental and physical wrecks found in our hospitals, prisons, reformatories, and insane asylums as morphine and alcoholic addicts, and constitute a sad picture of the results of the great World War. Statistics show that over 2,500,000 feeble-minded babies are born in the United States annually, caused largely by habit-forming drugs and narcotic drinks handled by drug stores and soft-drink soda fountains.

Drugless Healers, secret nostrums and fair promises
Delude the mind of thousand of the sick poor,
Yet how strange to think, in this nefarious trade,
That sensible men and women are dupes by fakirs made!
That creatures Nature meant to clean the streets
Have purchased lands, mansions, parks and seats;
No class escapes them, from the poor man's pay,
The Fakir and the nostrum trade take no small part away!
So, Down! with Chiros, Osteos, Drugless Healers and Shyster schemes!
They prey upon human credulity, and then steal their means.

3461 *Fourteenth Street, Northwest.*

TUBERCULOSIS OF THE HIP.*

By DONALD M. FAULKNER, M. D., Richmond, Va.

Tuberculosis more often affects the hip than any other single joint. Also it is more serious than tuberculosis of any other bone or joint, with the possible exception of the spine. Not only does it cause a high degree of disability, deformity, and permanent crippling, but it has also a definite and high mortality. Reports from most of the large clinics give a mortality of 15 to 20 per cent in tuberculosis of the hip—most of the deaths being from tuberculosis in some part of the body.

With so high a mortality we must exercise great care in the treatment of this condition and, first of all, in its diagnosis. The diagnosis of tuberculosis of the hip is a difficult matter. In a series of 208 cases, treated as tuberculosis of the hip at one of the leading orthopedic centers of the world and followed for fifteen years in each instance, it was found that in forty-six cases the diagnosis of tuberculosis was wrong. Here were forty-six children, deprived of normal life, taken away from schools, from association with healthy children, taken from their homes and kept in a hospital—in other words, deprived of all the happiness and activity that is in the life of the normal child and treated for a serious disease which they did not have.

How is the diagnosis of tuberculosis of the hip often made? A child develops a limp, usually complains of more or less pain in the hip or sometimes in the knee, seems to tire easily, and may have a low grade fever, often of the afternoon type. On physical examination, one finds some stiffness of the hip, a limitation of motion of the joint, spasm of the muscles about the hip, and possibly some slight deformity—most often slight flexion of the thigh on the pelvis. At once, the mind jumps to a premature conclusion: "This is tuberculosis of the hip!" Perhaps it is, but one should maintain an open mind. Any one of a number of conditions about the hip joint will show these same signs and symptoms. Any form of arthritis, epiphysitis, a low grade osteomyelitis, Legg-Perthes' disease, an epiphyseal injury, not uncommon in an active, growing child, even a sprain of the hip may cause the same complaint and similar findings. A positive tuberculin test, in a child under six years of age, may aid in the diagnosis, but tuberculosis elsewhere may be responsible for this. An X-ray examination of the hip is made and is usually negative. Certainly, on these findings we cannot make the diagnosis of tuberculosis.

We should put the child to bed, with strict orders not to allow any weight bearing, and keep it there for four weeks. If there is much pain or any deformity, both can be relieved by weight traction with Buck's extension. Morning and afternoon temperatures should be kept. At the end of four weeks, the X-ray examination should be repeated. If this is again negative and the symptoms and signs have abated, the child may be allowed to walk. If on walking the symptoms recur, rest in bed is again the proper treatment. At the end of another four weeks, another X-ray examination of the hip is made. In the majority of the cases which have tuberculosis, by this time the focus of infection will appear in the head or neck of the femur or in the acetabulum. I say this because I believe that nearly all cases of tuberculosis of the hip have

*From the Medical College of Virginia and the Crippled Children's Hospital.
Read, with lantern slides, before the Richmond Academy of Medicine, November 25, 1930.

their beginning in the bony structure of the joint and not in the synovial membrane. It is perfectly possible for the synovia to be infected primarily in all joints, but it is uncommon in all and rarest of all in the hip.

Now suppose one has jumped to the premature conclusion that the child has tuberculosis of the hip, before there is any X-ray evidence of it. The usual treatment is immobilization for two or three months in a long, heavy plaster cast extending from the nipple line to the toes of the affected limb. The cast is then removed and the hip is stiff from the prolonged immobility. An X-ray shows decalcification and atrophy of the bones of the hip joint, probably with lessening of the joint space—all of which may be due to the prolonged immobilization in plaster-of-Paris—and the roentgenologist tends to confirm us in our mistaken diagnosis. The child is treated for a year in plaster casts, another year in a non-walking splint, and a third year in an ambulatory splint—and has never had tuberculosis of the hip! It has been deprived of normal play, normal associations, normal life, and though hailed as a cure of a terrible disease, if not crippled in body is crippled in its mind, its mental attitude toward life. Out of 208 cases treated in a leading orthopedic clinic, it was found that 22 per cent of them did not have tuberculosis of the hip How many patients treated elsewhere as tuberculosis of the hip, without X-ray evidence of destructive lesions in the bone or even more positive proof of the diagnosis, have been treated unnecessarily?

We may well ask how can one make the diagnosis safely. There are only two methods by which the *positive* diagnosis can be made. One is by aspiration of material from the hip joint, guinea pig inoculation and finding tuberculosis in the pig. The other is by biopsy and finding the microscopic picture of tuberculosis in the tissue obtained or by giving tuberculosis to a guinea pig by inoculating it with material obtained at the operation. Biopsy of the hip joint is easily and safely done through the muscle splitting, posterior incision of Ober and is a relatively simple procedure. However, our diagnosis may be almost certain when, under continued rest, the signs and symptoms described persist or increase and there is X-ray evidence of a destructive process in the head or neck of the femur or in the acetabulum. If there is still doubt of the diagnosis, there should be no hesitancy in a biopsy.

With the diagnosis made, the question of the proper treatment of tuberculosis of the hip arises. As far back as the memory of orthopedic surgeons runs, the treatment has been conservative. Rest, by means of recumbency and plaster casts or other orthopedic appliances, usually over a period of years, heliotherapy, general constitutional measures—these have been the generally accepted rules of treatment. This ordinarily means a minimum of three years of treatment. Rollier, in Switzerland, is the leader in the conservative treatment of tuberculous joints. His reported results are remarkable. His clinic is in the high altitude of the Alps, and the Alpine sunlight, the Alpine air, and the Alpine altitude, with immobilization of the joint by apparatus which excludes neither light nor air, give him cures which no other clinic gets. Perhaps our climate is not proper to combat tuberculosis of the bone, but certainly in America we cannot approach his records by conservative treatment.

Follow-up records on tuberculosis of the hip are notoriously unreliable. I know of only one,[1] (from which I have already quoted) which has extended over a sufficiently long period to allow us to draw proper conclusions. This is the work of Smith and Watters, of the New York Orthopedic Dispensary and Hospital, which appeared in the *Journal of the American Medical Association* for January 21, 1928. An end-result study, covering a period of fifteen years in each instance, of 208 patients with tuberculosis of the hip joint, who had been at the country branch of the hospital for from four to seven years, was made. All had received the best conservative treatment, in the city hospital and clinic and at the country branch at White Plains. Twelve patients could not be reached. Of the 196 whose records could be completed, in forty-six or 22 per cent the diagnosis of tuberculosis of the hip was incorrect. Of the remaining cases, thirty-six or 24 per cent had died, mostly from other forms of tuberculosis; seventy-one cases or 47 per cent still had active tuberculosis. In forty-one patients or 27 per cent the disease was apparently quiescent, with varying degrees of deformity and markedly limited motion in the hip or no motion present. Only two patients were free from symptoms with useful range of motion in the joint. There had been

many and frequent relapses of cases which were presumably cured. The average length of treatment was 7.3 years.

I have examined the records of many cases treated in Richmond for tuberculosis of the hip; clinic cases from the Medical College of Virginia hospitals and from the Crippled Children's Hospital, and private cases. One can find very few cases which are evidently true tuberculosis and which have recovered with good function. Most of them have the record of long continued treatment and finally what is called a cure, with permanent deformity and more or less loss of motion. I feel sure that most of these are only quiescent, not cured cases, and that trauma or lowered resistance from illness may mean an acute flare-up of a tuberculous hip. There are a few normal hips which were diagnosed clinically and never showed X-ray destructive changes and which are now well. I venture to say that these never had tuberculosis of the hip. I recall only one case which showed X-ray evidence of tuberculosis and which became completely well with healing of the focus in the bone and a return to normal function. Unfortunately, these X-rays have been destroyed and thus cannot be shown.

With these poor results from conservative treatment, Dr. Russell A. Hibbs, of New York, was brave enough to cast aside tradition and began in 1923 to treat cases of *proved* tuberculosis of the hip by an operation to cause bony ankylosis between the femur and the ilium. He knew from long experience that the tubercular hips in which natural bony ankylosis occurred got well and stayed well. They never relapsed. He concluded from his studies of the cases treated at the New York Orthopaedic Dispensary and Hospital that the others were not well, but only quiescent, and often relapsed after long periods when supposedly cured.

Briefly, his operation[2] consists of removing most of the greater trochanter of the femur with a portion of the cortex of the shaft of the femur several inches long, making a slot in the ilium just above the acetabulum for the reception of one end of this piece of bone by turning up a flap of bone from the ilium, and then turning this graft through an arc of slightly more than 90 degrees to implant the distal end of it in the ilium and the proximal end against the remainder of the greater trochanter. This bony strut becomes firmly attached to the femur and to the pelvic bone, and in time bony ankylosis occurs also between the head of the femur and the acetabulum—due, in all probability, to the perfect immobilization obtained.

A majority of the bone surgeons of this country have been convinced of the truth of Hibbs' teachings. Instead of dismissing a child from treatment with a hip which has lost most or all of its motion, which probably shows some deformity, and in which the risk of recurrence is always a menace, they have concluded that it is better to discharge this child with a hip which has lost all of its motion, but which shows no deformity and in which the risk of recurrence has been eliminated. The lost motion is partially compensated for by motion in the lumbar spine and the ease with which these children run and play is proof that the stiffened hip is not a large handicap.

The surgical staff of the Crippled Children's Hospital at Richmond have operated on seven cases of tuberculosis of the hip with uniformly good results. These cases are reported briefly below. All of these children were given the trial of conservative treatment under excellent hospital control and X-ray examinations showed that the destructive progress of the disease was unchecked. All except two cases, most recently operated on, are well and these two cases are getting well. I recall three other patients operated on at St. Philip Hospital for Negroes. One died several months after operation from general tuberculosis and the other two, who were apparently well when they left the hospital, could not be reached for a follow-up examination.

Case Reports

Case 1. W. S., boy aged eleven years. Under conservative treatment for three years. Result: ½ inch shortening of extremity, 30° flexion, and slight adduction deformity of thigh. Marked limitation of motion, but no bony ankylosis and X-ray appearance that of active tuberculosis.

January 10, 1929. Hibbs' fusion operation.

May 3, 1929. Clinically, bony ankylosis present. X-ray shows some bony fusion, but not complete.

Follow-up October 18, 1930. Solid bony ankylosis at hip. Boy active and well. Leading a normal life. (See Fig. 1.)

Case 2. M. S., girl aged eleven years. Under conservative treatment for seven years.

Result: 1¾ inch shortening, 45° flexion and 15° adduction deformity. Very little motion in hip joint. X-ray shows destruction of most of head of femur and of floor of acetabulum.

Fig. 1.—From left to right, X-ray of hip in 1928; X-ray after one year of conservative treatment; X-ray after fusion of hip.

May 31, 1929. Hibbs' fusion operation.

Follow-up July 18, 1930. Firm bony ankylosis in good position. Moderate limp. One inch shortening. Walks and plays. Returned to a normal life. (See Fig. 2.)

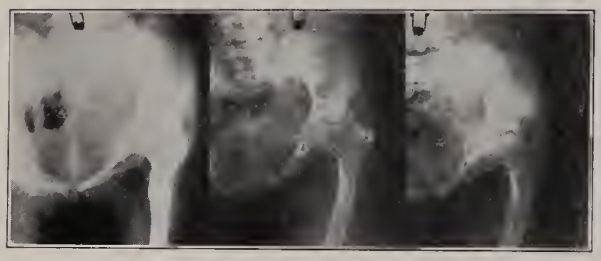

Fig. 2.—From right to left, shows X-ray of hip after several years of conservative treatment; X-ray two months after fusion operation; final X-ray after fusion of hip.

Case 3. A. H., girl aged eleven years. Had had tuberculosis of the hip for eight years. After fourteen months conservative treatment at the hospital there was 10° flexion and slight adduction deformity of the thigh, with 10° flexion the only motion present. X-ray showed increasing destruction of head of femur.

January 31, 1930. Hibbs' fusion operation. Some attempt at natural fusion found at operation.

Follow-up September 14, 1930. Firm bony fusion in good position. Walks and plays well. Returned home and to school.

Case 4. E. P., boy aged five years. After conservative treatment at the hospital for fourteen months there was 20° flexion deformity with limited motion in all directions; there was some improvement on physical examination, but there was abscess formation and rather marked extension of the destructive process in the X-rays.

February 4, 1930. Hibbs' fusion operation with excision of sinus.

November 15, 1930. Bony ankylosis present, though not entirely solid in the X-ray. Sinus healed. Beginning to walk. Still in hospital.

Case 5. D. H., boy aged eight years. Disease present for five years. Extensive destruction of head and neck of femur and of the acetabulum. Forty-five degree flexion and 10° adduction deformity. Fifteen degrees flexion only motion present. One and three-quarter inches shortening. Multiple draining sinuses and pressure sores. Has worn plaster casts for some years. Conservative treatment in the hospital was given for eleven months, largely to improve the general condition, which was very poor, and to attempt to heal the sinuses and pressure sores. These improved somewhat, but there was no improvement in the condition of the hip.

February 6, 1930. Hibbs' fusion operation. Sinuses still draining.

November 1, 1930. Fusion quite firm. Marked general improvement. There is still a large abscess in the buttock, but other sinuses have healed.

Case 6. M. McD., boy aged nine years. Conservative treatment for four years with marked improvement and healing of abscess. X-ray shows destruction in head of femur and in acetabulum, not healed, but apparently arrested. There is a slight flexion deformity and practically no motion in the hip.

March 17, 1930. Hibbs' fusion operation.

November 15, 1930. Bony fusion at hip in good position. Areas of destruction replaced by bone. Still in hospital under treatment for lumbar Pott's disease which began in 1928 while under conservative treatment for tuberculosis of the hip.

Case 7. L. N., aged seven years. After two years of conservative treatment there was 15° flexion deformity and motion limited by muscle spasm. The X-ray which showed on admission an area of erosion in the neck of the femur, now showed an increase in this area of destruction with erosion also of the head of the femur.

June 3, 1930. Hibbs' fusion operation.

November 1, 1930. Examination shows fairly firm ankylosis present and the X-ray shows fusion of the graft and partial fusion between head of femur and acetabulum. Still in hospital in plaster spica.

This child died in February, 1931, from tu-

bercular meningitis. At autopsy the hip was found to be firmly fused.

REFERENCES

1. Smith, A. D., and Watters, W. H.: Tuberculosis of the Hip; End Results of 150 Cases. *J. A. M. A.* 90, 189-191, January 21, 1928.
2. Hibbs, R. A.: Preliminary Report of 20 Cases of Hip-joint Tuberculosis Treated by Operation Devised to Eliminate Motion by Fusing Joint. *J. Bone & Joint Surg.*, 8, 522-533, July, 1926.

Medical Arts Building.

THE TREATMENT OF THE CONVULSIVE TOXEMIA OF PREGNANCY.*

By THOMAS LESLIE LEE, M. D., Kinston, N. C.

There develops in some women during the last trimester of pregnancy a symptom-complex whose chief manifestations are: Headache, scintillations, epigastralgia, rise in blood pressure, and albumin in the urine. This condition is at once recognized as that of pre-eclampsia. This same symptom-complex in the non-gravid woman, would probably be of no serious consequence but, occurring in the gravid state, the case at once assumes a most serious apect. If allowed to go untreated, convulsions and coma are sure to ensue. Why is this? Despite all research work and experimentation, the etiology of eclampsia is still a mystery. It is almost universally agreed that the above mentioned symptom-complex is produced by a toxin, in other words eclampsia is a toxicosis. But, where do the toxins originate? If the origin of toxins were known, the treatment of eclampsia would pass from empiric to specific but, until the origin is found, we must content ourselves with the empiric treatment. Many theories have been advanced as to the origin of the toxin; practically every organ in the body has been condemned as the source. The usually accepted sources are: the fetus and placenta, the liver, the kidneys, the gastro-intestinal tract, and the various combinations of these.

Eclampsia is classified, according to DeLee in the following groups: 1. Hepatic toxemia or the so-called true eclampsia; 2. Acute nephritis with or without convulsions; 3. Chronic nephritis with or without convulsions; 4. Essential or idiopathic hypertension. This classification, based on the most prominent underlying pathology found at autopsy, aids little in the treatment of the disease. In the first place, it is usually impossible to tell in which class a given case will fall and, in the second place, it matters little in which it falls as it will have little bearing on the treatment. In the mind of the author there are no two cases of eclampsia exactly alike and no two that will respond to the same treatment in exactly the same manner. For instance, in one case the condition improves so rapidly after delivery that no further treatment is needed; in another case the condition grows steadily worse if any operative interference is instituted; and on the other hand many cases will recover with no treatment. In view of these facts, there can be no standard method for the treatment of eclampsia, at least until the source of the toxin is known. Each case must be treated on its merits; we must treat the patient not the disease.

The treatment of eclampsia begins with the day one is engaged to deliver a gravid woman and extends throughout the puerperium. Every gravid woman should have a complete physical examination at the beginning of her pregnancy, including a complete study of the blood. All foci of infection such as infected tonsils, teeth and sinuses should be cleared up; any anemia found should be treated vigorously. A history of any previous kidney lesion should be gone into in detail. Prenatal care is the major portion of the treatment. Its principles are familiar and will not be discussed, only to say that it should be followed in every detail. I often wonder if the pregnant woman is not a little neglected due to lack of detail in our bi-monthly examinations.

In the large clinics of this and other countries, the treatment of eclampsia usually comes under one of two heads, conservative or radical. The conservatives teach eclampsia is a self-limited disease, that if the convulsions can be controlled for a while the patient will recover. Only under the most extreme circumstances or where there is some disproportion between the passenger and the passages is an operative procedure allowed. On the other hand, the radicals teach that eclampsia is due to some abnormal process in the ovum; that the patient should be delivered as early and as easily as possible after the onset of symptoms. I do not believe either teaching entirely correct. What may seem a radical treatment in one case would really be conservative as we may conserve both the mother and child.

*Read before the Seaboard Medical Association of Virginia and North Carolina, at its annual meeting in Elizabeth City, N. C., December 3, 1930.

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First of importance in the treatment of eclampsia is that all patients should be hospitalized. True, the financial question and the distance to the hospital are obstacles. Many of my patients have been among the poorest class but, when the gravity of the situation is explained to all concerned, arrangements for the cost of hospitalization are usually made. The distance from the hospital is a minor obstacle. Many is the time I have taken the patient in my car (with some member of the family) to the hospital and the patient is none the worse for it. If there is any disease for which we need all the help possible from medical science it is eclampsia. Nursing, a most important step in the treatment, is taken care of if the patient is hospitalized. I know of no other disease in which nursing care has as much effect on the outcome of the treatment as in eclampsia. These patients are in coma and are having convulsions. Their condition must be watched continuously, all external irritants must be withheld, the mouth and tongue must be protected, respiratory obstruction must not be allowed to kill the patient, the mucus must be kept out of the throat so none will be insufflated into the bronchi and thus cause a fatal pneumonia. The kidneys and bowels must not be neglected. Numerous other treatments essential to good management must be given, which would be all but impossible at home. It is true many cases of eclampsia have been successfully treated at home but I am sure there are an equal number or more that have been unsuccessfuly treated, to say nothing of the enormous number of still born babies and extensive injuries to the birth canal. Can there be any doubt as to the value of hospitalization when the large clinics where all patients are treated in a hospital report mortality rates from 1½ to 25 per cent and the general mortality rate is from 20 to 45 per cent?

There being no condition in which the attendant has so many vital functions to watch as in eclampsia, judgment becomes the major portion of the treatment. If all cases were alike and all organs affected alike in each case, the treatment would be simple; there would be a standard treatment which would be applied and the patient recover as when quinine is administered in malaria. What to do and when to do it is the all important question. Sound medical, surgical, and most important of all, obstetrical judgment is imperative,—judgment acquired only through experience and the application of primary obstetrical principles. Patients with eclampsia should not be made emergency operative patients unless they would be such without the presence of eclampsia. Time, careful examination, and close observation are necessary for good treatment.

An eclamptic patient should be treated conservatively for from six to twelve hours. During this period her condition should be thoroughly studied and an estimate made of how much or how little she will stand. The treatment during this period is directed primarily towards controlling the convulsions and reinforcing the circulation. Special attention must be paid the fetal heart tones, for it is during this period that many babies are lost. If the fetus shows signs of distress or if the convulsions do not cease and the coma deepens, preparation should be made to deliver the patient, if her condition will justify it. Certain principles must be regarded in the selection of the method of delivery. First, it is criminal to try to drag the fetus through a birth canal that is not prepared, leaving nothing but extensive injury and trauma in its path. Second, no operation per vagina can be safely performed without complete dilatation and obliteration of the cervix. Many physicians have the idea that the cervix can be dilated manually; this is a misconception, unless labor has progressed so far as to obliterate the cervix. With the long hard cervix it is not manual dilatation at all, but manual destruction. If these principles are kept in mind, the morbidity of eclampsia will be reduced to almost nothing. What method shall we use to deliver these patients? This phase might well be considered under two heads: 1. Those who will deliver spontaneously, and, 2. Those who will not. If a spontaneous delivery is possible, this is ideal, and many will deliver themselves. In many cases uterine contractions will start with the onset of convulsions; these cases are allowed to continue in labor until the head descends to the perineum when, after thorough ironing of the perineum, low forceps are applied to reduce the time of the second stage. Episiotomy is done on the slightest indication. The type of case, not in labor, which after treatment continues to have convulsions and deepening coma,

offers the real problem as to the selection of the method of delivery. Again, each case must be judged separately, as no method is applicable to all. If the patient is a multipara with a soft cervix that will admit a finger or two, I believe that the insertion of a Voorhees' bag is the best method to induce labor; however, it must be remembered that bags do not produce all that is to be desired in the dilatation of the cervix. When the bag is out of the cervix, if the cervix is not completely obliterated, more time must be allowed for this to take place. After complete dilatation and obliteration of the cervix, version and extraction has been found the best method to perfect the delivery. Those primiparae, and rarely multiparae, with the long hard cervix and rigid perineum offer a real problem in the selection of the best method of delivery. At best, these cases, even after induction of labor, have a period of from ten to twenty hours of continuous irritation from the uterine contractions. Until two years ago I used the induction of labor by either bags or rupturing the membranes and packing the cervix with gauze. My results were not what I would have liked them to be, especially with regards the fetus, as my fetal mortality rate was extremely high. Two years ago I started using Caesarean section for these cases and my results as to both maternal and fetal mortality and morbidity have shown a marked improvement. This improvement I believe is due to the avoidance of trauma, as there is not near as much trauma to a Caesarean as there is to an operative delivery accomplished from below after the induction of labor. When the patient has not been examined vaginally and when the toxemia is very severe, I believe the classical Caesarean to be the operation of choice. In all other cases and when ever practical, I use the low cervical. This operation has many advantages which I will not attempt to discuss here, only to say that since its popularization by DeLee, Hirst, Beck, and others, the indications for Caesarean have been safely extended to those cases potentially infected and to those already in labor. I recall a case in which another practitioner had inserted a bag for the induction of labor in a case of threatened eclampsia. About eight hours afterwards the patient began having convulsions and was growing rapidly worse. The bag was removed and a low section was done immediately. Improvement was rapid and mother and baby are healthy today. The puerperium was afebrile. The mother is pregnant again, and I expect her to have a normal labor. If I can leave but one thought with you, I will feel fully repaid for my efforts, and that is—do not try to drag a baby through a birth canal which is not prepared. Imagine if you can how you would feel if some one had you by the head or feet trying with main force to drag you through the elbow of a stove pipe.

The drugs used in eclampsia are few; digitalis, morphia, glucose, magnesium sulphate, and sodium amytal are the chief ones used. Digitalis is used on every patient as soon as they are seen. The heart may show no evidence of decompensation, yet with the added strain of the high arterial tension and the convulsive seizures there may be said to be a potential decompensation; therefore, it is wise to afford the heart muscles all the support possible. Digifoline, one ampoule every four hours, acts well and has given good results. Morphia is useful to control the convulsions. Stroganov recommends its use until its physiologic effect is noted, that is, until the respirations are from ten to fourteen per minute. I have never used the drug to this extent. Morphia in ½ grain doses is particularly useful when the patient is at home and must be transported to the hospital, this amount being given just before the trip is started. Glucose should be used freely. Titus, of Pittsburgh, has shown there is a glycogen deficiency. To quote from an article by Titus and Givens: "The pathologic progress of toxemia is dependent on a carbohydrate deficiency in the maternal organism, particularly in respect to the impairment of the physiologic activity of the liver when unduly depleted of glycogen. It is indisputable that the liver and its functions play an important part in the ability or inability of the patient to recover. This is confirmed both clinically and pathologically, and, indeed, the distinctive pathology of certain necrotic lesions in the liver has been considered pathognomonic of the various types of toxemia of pregnancy." Titus has also found the therapeutic dose of glucose to be seventy-five grams for the average adult patient; when less than this is given, the pancreas is stimulated to over-activity and the glucose is converted too fast; if more is given, the body cannot care for it. For this reason, it is not necessary

to buffer this amount of glucose with insulin. The glucose is usually administered in a 25 per cent solution, though it may be used up to 50 per cent. Three hundred c.c. of a 25 per cent solution is injected slowly, intravenously, and this is repeated as often as necessary, the criteria for repetition being increasing toxemia or an approaching anuria.

Edema of the brain with its resultant intracranial pressure is declared by Zangemeister to be the cause of eclampsia. While this statement in its entirety cannot be accepted, edema of the brain certainly plays an important part in the causation of the convulsions. Lazard found that magnesium sulphate in therapeutic doses, intravenously, does no harm to the blood or liver and has a dehydrating effect upon the brain. Thus, by its dehydrating effect upon the brain the intracranial pressure is reduced, the blood pressure lowered and the convulsions cease or become much less frequent. Magnesium sulphate is used in a 10 per cent solution, twenty cubic centimeters being given intravenously, and this is repeated every hour for six doses unless the convulsions cease. I can recall many cases where I have been able to control the convulsions with the use of magnesium sulphate alone; of course, there are others in which it seemed that I might as well have been giving water as to the therapeutic effects noted. This drug does no harm and it is my practice to use it in every case.

Temple Fay, of Philadelphia, has recently expounded a most interesting theory in regard to the control of intracranial pressure. Since the pressure inside the skull is due to an edema of the brain, if the intake of fluids is limited, the edema will be controlled and so will the pressure. In a recent conversation with him, I was informed that when the symptoms of pre-eclampsia are present, convulsions are much less prone to develop if the intake of fluids is limited to the amount excreted or less, than when a normal amount of fluid is taken.

Much has been written recently concerning the use of sodium amytal in eclampsia. Many authors report excellent results with its use, stating they are able to control the convulsions in nearly all cases. This has not been my experience. True, the patient is quieter and maybe the convulsions are a little less frequent while the patient is under the effect of the drug, but, when the effects of the drug are gone they are as bad as ever. Sodium amytal has been found very useful to control the delirium which is present when the coma begins to lighten. Bromides and chloral have about been discarded for use in this phase of the treatment as sodium amytal has been found so much more useful.

Two other procedures have been found beneficial in the treatment of eclampsia, namely, gastric lavage and the introduction of fluids. In practically all cases the stomach is full of foul material and the patient vomits at frequent intervals. The vomiting will usually continue until the stomach is empty and the quickest way to obtain this is by a gastric lavage. If lavage is to be used we must be thorough with it. The stomach must be

TABLE I

Showing Number of White and Colored Births Attended by Physicians and Midwives With Incidence of Deaths From Eclampsia for Years 1926-27-28

Year	Number of Births	Delivered by Physicians	Delivered by Midwives	Eclamptic Deaths	Incidence
WHITE					
1926.....	58,865	49,434	7,628	175	1 in 288
1927.....	57,496	50,496	7,141	113	1 in 508
1928.....	55,813	49,371	6,371	152	1 in 367
COLORED					
1926.....	25,025	7,431	17,397	132	1 in 187
1927.....	25,176	8,152	17,024	82	1 in 307
1928.....	24,551	8,195	16,356	114	1 in 214

TABLE II

Comparing the Incidence of Deaths From Eclampsia in North Carolina, Among White and Colored, for Years 1926-'27-'28

Year	Births	Eclamptic Deaths	Incidence
WHITE			
1926.....	58,865	175	1 in 288
1927.....	57,496	113	1 in 508
1928.....	55,813	152	1 in 367
COLORED			
1926.....	25,025	132	1 in 187
1927.....	25,176	82	1 in 307
1928.....	2,5514	114	1 in 214

From this table it will be noted that in each year there are about one-third more deaths from Eclampsia among the colored population than among the white.

washed until the returned fluid is clear; otherwise, the lavage will be useless. Also, all the fluid is siphoned back, or the patient will continue to vomit. By removing the contents of the stomach through a tube, doubtless many fatal cases of pneumonia are prevented. Normal saline given by hypodermoclysis is of special benefit in those cases with little edema; in those with marked edema and a chloride retention, it should be used sparingly or not at all. The body fluids as a rule are at a low level, as much fluid has been lost through the kidneys and skin, and none has been replaced.

In attempting a final summary on the treatment of the convulsive toxemia of pregnancy, one is impressed by the fact that through better prophylaxis the incidence is being slowly diminished. While a large number are still seen, the prognosis as a general rule is improved. The often sudden and alarming symptoms associated with the convulsive toxemias develop a fear or even a panic in the minds of some physicians, that seems only satisfied by a radical procedure carried out at the expense of irreparable damage or life itself. Experience has taught that the proper selection of the method of delivery and the avoidance of shock, along with the use of glucose, magnesium sulphate, morphia, sodium amytal, fluids, and last, but most important, hospitalization will greatly reduce the mortality and morbidity. But there is still much to be desired, and no branch of obstetrics requires more thought, attention and skill on the part of the seriously minded in order to further improve the situation.

THYROID EXTRACT IN THE TREATMENT OF CERTAIN CARDIAC DISORDERS.*

By DOUGLAS G. CHAPMAN, M. D., Richmond, Va.

In 1918, Zondek described a cardiac syndrome which he termed "myxedema heart." He reported four cases characterized by marked enlargement of the right and left ventricles, a slow pulse rate with normal blood pressure, and electrocardiographic changes that returned to normal after thyroid extract was given.

Fahr, in 1925, reviewed the literature and found only eight cases recorded. Since then he has reported six cases, one observed for over four years. The results were good in all cases and the size of the heart as revealed by the teleroentgenogram was usually reduced to normal within two weeks. Other observers since then have reported similar cases.

Thacher and White, in 1926, examined fourteen cases of myxedema with special reference to the electrocardiograms. In all these cases there was a low T wave in Lead II. They state that there is a definite relation between the electrocardiogram and the basal metabolic rate in myxedema.

Willius and Haines studied one hundred and sixty-two cases of myxedema, and in their extensive experience they do not report a single case of heart failure due to myxedema. However, of the nineteen cases in which electrocardiographic studies were made, before and after treatment, twelve showed an abnormality which disappeared after thyroid extract was given.

White, Means and Kratz studied forty-eight cases of myxedema and concluded that heart failure due to myxedema is rare. They report only one case.

An extensive study of hypothyroidism with reference to the electrocardiographic changes was made by Reid and Kenway who examined two hundred and sixty cases. They conclude that the changes are not frequent enough to be called characteristic of hypothyroidism.

There is little written in regard to the heart in myxedema. It has long been known, however, that myxedema predisposes to sclerosis. Kish believes there is a loss of the transverse striations with granular disintegration and later cloudiness of the muscle fibers.

Goldberg's studies on sheep and goats showed that in eleven out of seventeen cases there was a decided calcification of the aorta, cardiac dilatation and a marked degree of arteriosclerosis after thyroidectomy.

Brooks and Larkin studied the hearts after thyroidectomy on rabbits. They were examined from two to forty-three days after operation, and did not show any change in the myocardium.

The following electrocardiographic changes are frequently seen in hypothyroidism: low or absent P and T waves especially in Lead II; diphasic and negative T waves in one or more Leads; spread and notched QRS complexes; left ventricular preponderance; delayed auriculo-ventricular conduction and low voltage.

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*From the Medical Department of St. Elizabeth's Hospital, Richmond, Va.

Read before the sixty-first annual meeting of the Medical Society of Virginia, at Norfolk, October 21-23, 1930.

I have had three cases of hypothyroidism in which cardiac distress was the outstanding feature. They were relieved of their symptoms by thyroid extract, and are doubtless worth reporting on this account.

Case I.—M. A. R., white, female, married, age sixty-two, was first seen in November, 1928, complaining of "nervous prostration extreme exhaustion" and involvement of the heart. Her father died of angina pectoris and mother died of tuberculosis. The past history was negative except for a long standing pelvic disorder and tonsillectomy in 1925.

The present illness began in January, 1927, while in Wisconsin, during a severe cold spell. On being chilled she would have severe sharp pains over the precordium radiating to the shoulders and arms. Her physician diagnosed it angina pectoris, and she was given nitroglycerine which relieved the pain. On leaving Wisconsin she went to New York where she remained in bed for ten days with characteristic attacks of angina for which she received treatment. Due to the very definite history of cold precipitating the attacks, she was advised to take a trip to South America. During the remainder of the winter in South America and during the summer she experienced no discomfort except while in England, during a cold, damp spell. In November, 1928, while in Richmond, she had characteristic attacks of angina following exposure to cold, and was seen by Dr. Garnett Nelson. After two weeks in bed with eight to ten attacks of angina a day she was admitted to St. Luke's Hospital.

The physical examination was negative except for mental dullness, a stupid appearance, puffiness about the face, dry skin, and inability to keep warm. The heart was apparently negative except for a systolic murmur over the base, the pulse rate was 80, blood pressure 124/76. The vessels seemed normal.

She remained in the hospital eight and one-half weeks where she received practically all of the recognized drugs for relieving angina. For the first ten days she was given each day an average of 8 nitroglycerine tablets, gr. 1/100, 4 tablets of euphyllin, and 1 ampule of amyl nitrite. During the next fourteen days a total of 339 tablets of nitroglycerine, gr. 1/100, was taken. Besides the nitroglycerine, morphine, amyl nitrite and euphyllin were tried without relief.

Due to the failure of the usual relieving drugs and the clinical picture of myxedema,

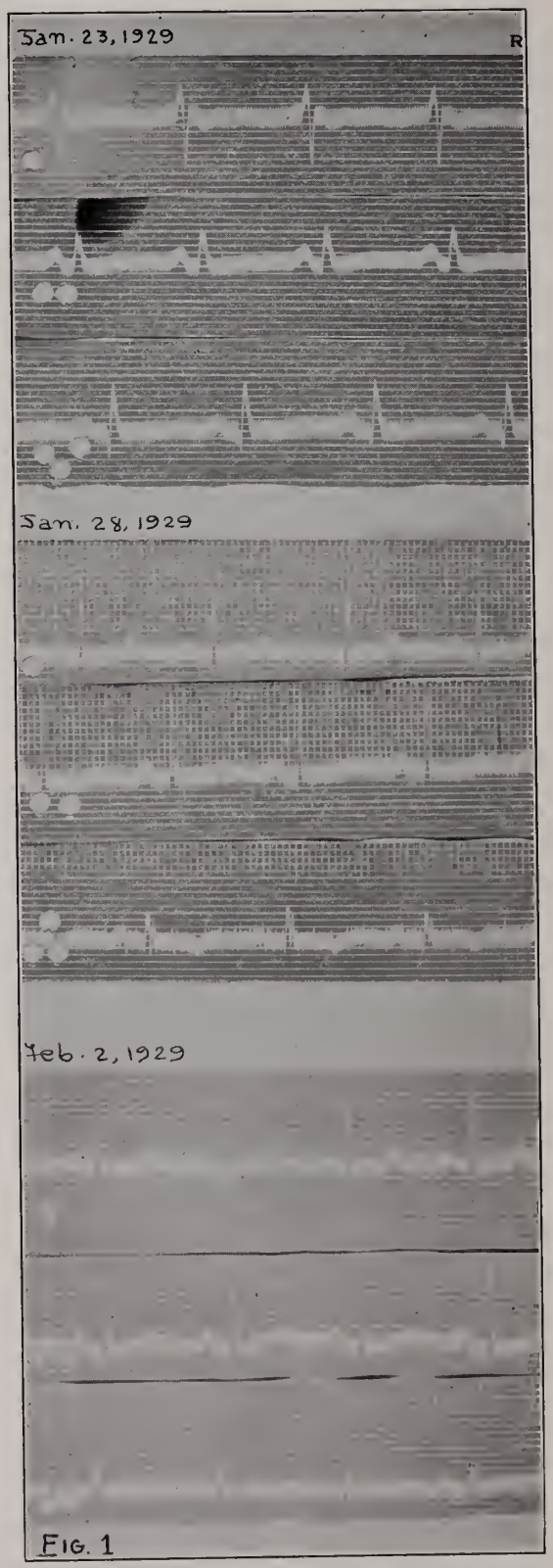

Fig. 1.—Three electrocardiograms showing changes in the P waves, the QRS complexes and the T waves before and after treatment with thyroid extract. Electrocardiogram No. 1 was taken before treatment.

thyroid extract, gr. 2, was given three times a day. For the next three days, 22, 18, and 14 tablets of nitroglycerine were taken, with an occasional dose of morphine. For the next few days only an occasional dose of nitroglycerine was necessary. After the sixth day none was taken.

On the fourth day after the thyroid extract was begun, the patient for the first time allowed the cover to be removed from around her neck, and her arms to be exposed. She admitted that she was better and on the seventh day sat up in a chair. On the sixteenth day she was walking and left the hospital on the nineteenth day after the thyroid extract was first given. Unfortunately the basal metabolic rate was not obtained before the thyroid therapy was started, but ten days afterward it was minus 10.

She has been seen many times since and is symptom free. On one occasion her metabolism went to minus 20 and several attacks followed after exposure to cold. Her metabolism ranges between plus 5 and minus 5 on thyroid extract, gr. 2, three times a day.

Case II.—R. K., white, male, age thirty-eight, complained of indigestion and severe pains over his heart, radiating down the right arm. These spells would come on frequently after exertion but more often when he worried or was exposed to cold. He stated that for the past few months he was forgetful, sluggish, and did not care what happened. There were spells of depression which frequently precipitated an attack of angina. Several of the attacks were severe and morphine was necessary to control the pain.

The past history was negative except for scarlet fever as a child, and recurring attacks of tonsillitis for which tonsillectomy was done in 1918. He has had indigestion at times for fifteen years. The first attack of angina occurred during the War when he was exposed to the cold and lost considerable sleep. There were frequent mild attacks from that time until February, 1930, when he had an attack of dizziness, shortness of breath and more severe pain over his heart than ever before. He was taken to a hospital and treated for one week for angina pectoris and discharged with instructions and medicine for angina. The attacks became more frequent and he was referred to St. Elizabeth's Hospital in June, 1930, for general examination.

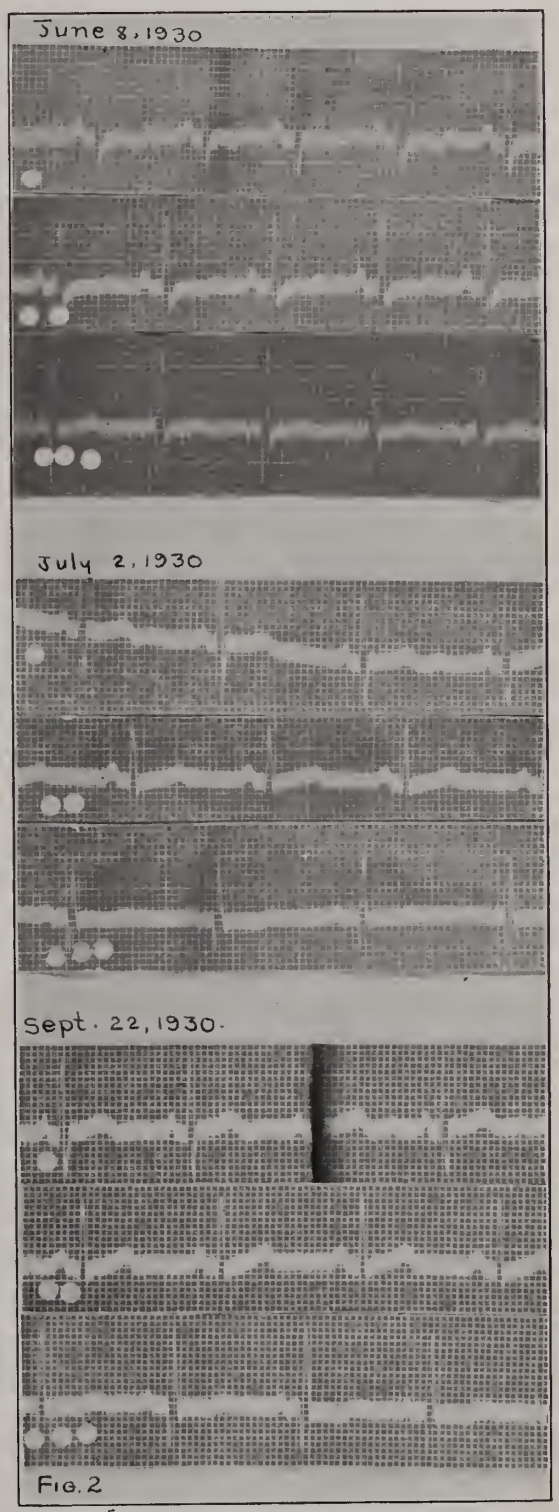

Fig. 2.—Electrocardiogram No. 1 was taken before thyroid extract was given. The T wave is inverted in Lead I, diphasic in Lead II, and the P wave is inverted in Lead III. In electrocardiograms Nos. 2 and 3, they are positive.

The laboratory examinations were practically negative except for the absence of free hydrochloric acid in the gastric contents, a minus 25 metabolism, and electrocardiographic evidence of coronary sclerosis.

Physical examination was negative except for marked overweight, slight edema of the ankles, many extra systoles of the heart, the pulse rate was 64, blood pressure 112/80.

He was given dilute hydrochloric acid and small doses of thyroid extract, which were gradually increased to six grains a day. Since starting this therapy in June, there has not been a single attack of angina, the indigestion is considerably improved, and he has resumed his usual work which was impossible for three months prior to that time.

Case III.—H. M. DeJ., physician, age fifty-seven, entered St. Elizabeth's Hospital, October 24, 1929, complaining of shortness of breath on the slightest exertion, and rapid, irregular heart action. The past history was negative except for a nervous disposition, influenza, and malaria early in life, and tonsillectomy in 1925. He stated that all his life he had a slow pulse and was a strong and healthy man but could not exert himself unduly on account of shortness of breath. For three and one-half years he has been gradually getting weaker but was able to play eighteen holes of golf and get about fairly well. Three months ago he began to have a weakness and fatigability that was unusual and it was necessary gradually to reduce his exercise to two holes of golf in the late afternoon. The patient had seen several physicians during the past three months and was advised differently by most of them. Digitalis was the chief drug used to control the heart symptoms. It had no effect and its use was discontinued and resumed several times. The patient went to a popular summer resort and was given hot baths and general massage. Following this, all the symptoms were exaggerated and he could hardly move about with a cane.

On admission to the hospital the physical examination showed a large, well-developed, slightly obese man. The hair was scant and the skin of his hands could be picked up and a ridge an inch high would persist for a long time. The skin over his legs and feet was dry and scaly. The heart apex was well outside the mid-clavicular line, the rhythm irregular, pulse approximately 68 at rest, 140 after slight exercise, blood pressure 108/70. No murmurs could be heard. Arteries were not abnormally

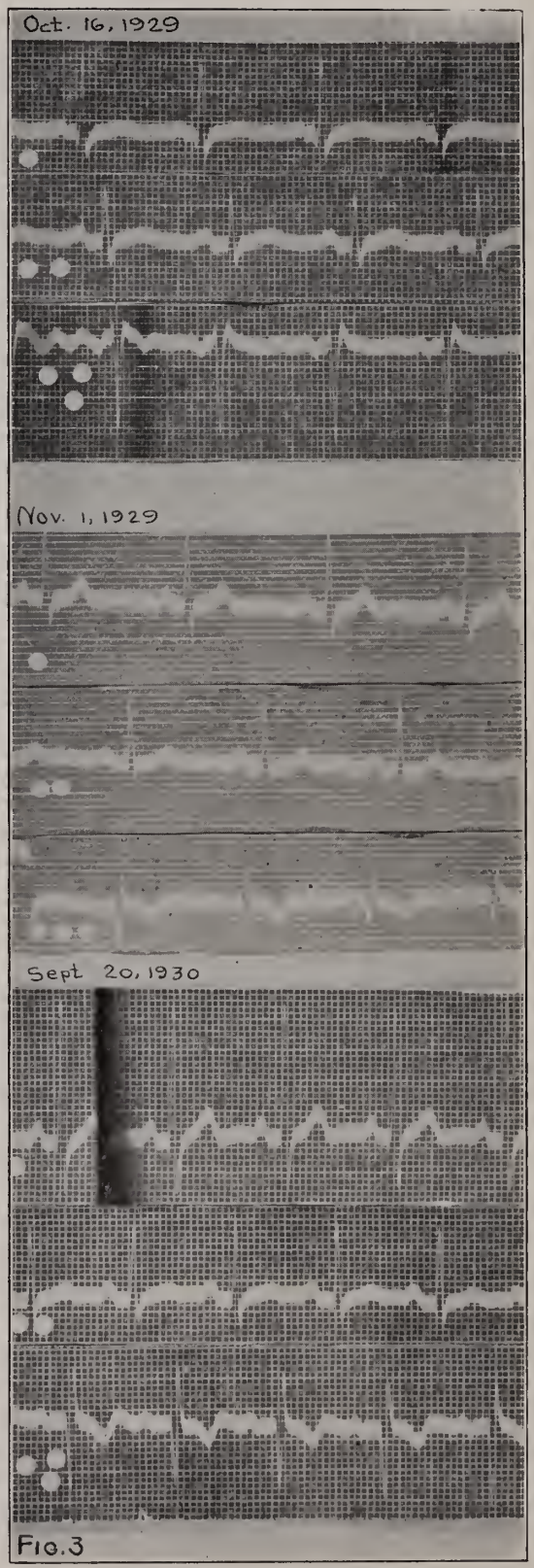

Fig. 3.—Electrocardiogram No. 1 was taken before treatment with thyroid extract. There is a low rolling T wave in Leads I and II. In Lead III the T wave is iso-electric and the P wave is inverted. Note changes.

sclerosed, abdomen was obese. The routine laboratory work, kidney function, and blood urea were normal. Basal metabolism was minus 28. He was told that his symptoms were most likely due to myxedema and as digitalis had failed to benefit his condition, its use should be discontinued. It was with considerable hesitation that he agreed to this.

Thyroid extract, gr. 2, was given three times a day. In three days he felt better and in five days he could walk around better than at any time in the past three months. In twelve days he discarded his cane, and several months after treatment he walked seven miles. He is now in normal health without any of his former complaints, and his metabolism has ranged between minus 11 and plus 2, on 2 grains of thyroid extract three times a day.

Comment

Due caution should be taken in giving thyroid extract to patients with cardiac symptoms. Christian, Sturgis, and White have observed cases in which it produced definite symptoms of angina pectoris. Christian was the first to warn against the indiscriminate use of thyroid extract since it increases the metabolism, blood flow, and work of the heart. The danger is greater with anemia on account of the increased demand of the tissue for oxygen. He advises in certain cases to digitalize beforehand.

It is obvious that any cardiac patient should be carefully studied before administering remedies, particularly before giving thyroid preparations, but, when the cardiac disorder is due to thyroid deficiency, treatment of this deficiency will often give excellent results.

Bibliography

Christian, H.: The Heart and Its Management in Myxedema, *Rhode Island Med. J.*, 1925, VIII, 109.
Fahr, G.: Myxedema, *Am. Heart J.*, 3:14, 1927.
Idem: Myxedema Heart, *J. A. M. A.*, 84:345, 1925.
Fishberg, A.: Arteriosclerosis in Thyroid Deficiency, *J. A. M. A.*, 82:463, 1924.
Holzman, J. E.: Myxedema Heart, *Am. Heart J.*, Vol. 4:351, 1929.
Means, J., White P., and Krantz, C.: Observations on the Heart in Myxedema, *Boston M. & S. J.*, 195:455, 1926.
Reid, W. D., and Kenway, F. L.: Electrocardiographic Signs Associated With Low Basal Metabolism, *Endocrinology*, 13:191, 1929.
Sturgis, C.: Angina Pectoris as a Complication in Myxedema and Exophthalmic Goiter, *Boston M. & S. J.*, 195:351, 1926.
Idem: The Cardiovascular System in Diseases of the Thyroid Gland, *J. Mich. M. Soc.*, 261, 1927.
Thacher, C.: Electrocardiograms in Myxedema, *Am. J. M. Sc.*, 171:61, 1926.
Willius, F., and Haines, S.: Status of the Heart in Myxedema, *Am. Heart J.*, 1:67, 1925.
Ziskin, T.: Angina Pectoris Associated with Myxedema Heart, *U. S. Vet. Bur. M. Bulletin*, 6:24, 1930.

Discussion

Dr. Wm. H Higgins, Richmond: The clinical syndrome which Dr. Chapman has brought to our attention is a very much overlooked but important cardiac disturbance. It apparently constitutes only a very small percentage of cases of heart disease but it has been recognized by a sufficient number of careful observers to give it a place in the classification of heart disease. Even in the absence of so-called cardiac symptoms in most cases of myxedema, fatigability is probably the most outstanding symptom. No one has satisfactorily explained this profound weakness which responds so promptly to thyroid therapy. Is it not possible that the associated lack of oxygen consumption may not only produce this symptom, but also be the underlying factor in those cases where anginal pains have been reported? Most pathologists speak of the sclerosis of the blood vessels in this condition, but the prompt improvement under specific treatment makes this improbable.

I wish to report a case similar to Dr. Chapman's patient who had been a cardiac invalid for three months prior to her admission to my service in a Richmond hospital. Her chief complaints were—marked weakness, shortness of breath and anginoid pains. She showed evidences of a myocardial insufficiency which has not responded to digitalis therapy. In view of a low metabolic reading, she was placed on thyroid substance, which was followed by a remarkable improvement. During the last four years she has led an active life, but if she discontinues the use of thyroid her symptoms return.

Dr. Chapman's paper is worthy of careful consideration and should be kept in mind when cardiac disorders do not respond to the usual mode of treatment.

THE CHALLENGE OF HEART DISEASE.*

By LESLIE T. GAGER, M. D., Washington, D. C.

The other day I came upon a discussion of present trends in medicine by that keen critic of our profession, Mr. H. L. Mencken. With frankness, if not elegance of expression, he began his remarks by stating that medical papers — and non-medical ones too — are "largely filled with boloney." In the program tonight, fortunately, there has been plenty of meat—and of an entirely different kind.

For heart disease, premature heart disease—and it is premature, in my opinion, when it occurs at any age short of the Biblical age of senescence, three score years and ten—is too common, too disabling to body, too disturbing to mind, often too disastrous to life, for us to give its problems any but the most serious consideration.

On the one hand, are the purely inflammatory types of heart disease, as a cause of

*Opening discussion at a symposium on Heart Disease before the George Washington University Medical Society, November 15, 1930.

which rheumatic infection is the classical and foremost offender, choosing its victims in childhood and adolescence and betraying a most discouragingly progressive course. The promising therapeutic results of Small with a specific serum have not been obtained with equal success by Wilson or by Swift, and the effects of tonsillectomy, either for prophylaxis or to prevent recurrent attacks of rheumatic infection of the heart, are far from satisfactory. And yet, because these inflammatory diseases of the heart are due to organisms which invade the body from without, faith in an ideal of immunity and effort to attain it do appear to me to be justified, rather than a belief that the bacterial diseases are inevitable.

On the other hand, there are the acute and chronic degenerations of the heart muscle, and these are due in large measure to failure of the blood supply to the myocardium and hence its inadequate nutrition. These diseases, too, occur so early in the life span as to present to medicine one of its greatest challenges, if indeed they do not almost constitute an indictment of life as it is lived in the machine age. If he escape the serious infections in his earlier life, what shall a man do to save himself from sclerosis of his arteries, particularly of his coronaries?

In reading Rolleston's Life of Allbutt, I was struck by the longevity of the Regius Professors of Physic at Cambridge—almost the whole line over several centuries lived to be eighty or ninety years of age. And we know that among the native tribes of Africa as among the Chinese peoples, who are relatively untouched by Western civilization, arteriosclerosis and hypertension are comparatively unimportant if not unknown But, since for most of us these environmental possibilities are rather remote, we must do what we can at home.

If we turn our attention to the physiological changes which underlie the conditions which have been discussed tonight—coronary thrombosis, angina pectoris, auricular fibrillation—it is clear that a common ground is to be found in a local intracardiac circulatory failure. The blood supply is interrupted, anoxemia develops, tissue metabolism fails, and, according to the myocardial area and its extent involved in this failure, and whether it occurs abruptly or gradually, there is presented a great variety of clinical picture. Some of the elements are failure of the left or right side of the heart, pain of greater or less degree and distribution, partial or complete heart block and other disturbances in rhythm varying from premature beats to fibrillation of auricle or ventricle.

Whether or not we subscribe to Géraudel's hypothesis that auricle and ventricle have each an independent mechanism wholly responsive to the blood supply of the sino-auricular node in one instance and that of the auriculoventricular node and bundle in the other, we must admit the importance of local circulatory disturbances within the heart. On the anatomical side the studies of Géraudel, like those of Gross, Wearn, Whitten, and others, demonstrate the safeguards that nature has provided for the intracardiac circulation and the disorders which result when the coronary blood flow, even in a terminal branch, is obstructed, provided this branch, much like the lenticulo-striate artery in the brain, supplies some particularly vital spot. Clinical experience likewise, as in the case of heart block, bears witness to the improvement resulting from rest, or digitalis, or from the removal of some embarrassment to heart action—generalized edema, pleural or pericardial effusion—all tending to improve the blood supply and oxygenation of the heart muscle.

And not only in infectious heart disease is found the benefit which may result from the removal of infected teeth or tonsils, or gallbladder or treating a prostatitis. Practically, the remission of anginal attacks may be achieved by such measures and not uncommonly does acute infection elsewhere in the body precipitate coronary thrombosis as well as congestive heart failure. So closely, indeed, are the practical problems of the diagnosis and treatment of heart disease bound up with disorders elsewhere in the body that what the patient needs is not so much a specialist as a good doctor.

For the acute attack of coronary thrombosis, I agree in emphasizing the fundamental importance of rest, and to insure that rest, in the presence of great pain and anxiety, the free use of morphine. If, at this stage of a severe thrombosis, I had my choice of one of the two drugs, morphine or digitalis, I should choose morphine.

As a measure to control congestive failure in arteriosclerotic heart disease, digitalis effect, once obtained, can often be maintained,

as Gold has recently shown, on doses rather smaller than some of us have been led to use in recent years.

For a wide view of some of the problems of heart disease as they present themselves today, I should like, in closing, to come back once more to our friend, Mr. Mencken. He expresses the opinion that in certain of its tendencies the public hygiene movement shows signs of becoming a menace rather than a help. "There is no reason in science or morals," he says, "why persons who want to patronize a Christian Scientist or chiropractor should be forbidden to do it. The death rate among them is enormously exaggerated by the uplifters I have mentioned; moreover, evidence is lacking that civilization would suffer even if it were three times as high . . . The job before modern medicine is not to force itself upon those who do not want it but to make itself more useful and accessible to those who do."

As it may be applied to patients with heart disease, actual and potential, in private practice and in our cardiac clinics, this last sentiment, it seems to me, is one that we can heartily endorse.

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STERILIZATION—A REVIEW.*

By CHAS. W. PUTNEY, M D., Staunton, Va.
Consulting Surgeon to the Western State Hospital.

Sterilization and asexualization were practiced by the ancients, as is shown by reference to the early writings. The Scriptures refer to the practice frequently. These operations were performed in ancient Assyria, China, Egypt, India, Rome, and Greece, and are now practiced among the inhabitants of Borneo, Java, Malaya, certain tribes of the Philippines and Australia, and certain tribes of the American Indians. The so-called "White Doves" of Russia are a castrated religious sect. In Roumania, sterilization is practiced by certain religious devotees for the "Kingdom of Heaven's Sake." A very large majority of the earlier cases were castrated as a religious rite, or as an act of punishment, and not for eugenic purposes. This motive does not seem to hold favor in the light of modern civilization. Several of the states in the Union apparently do not execute the laws which permit sterilization, probably because their statutory laws include "Sterilization of the Criminal," along with "Eugenic Sterilization." A few have amended their statutes accordingly and have since become more active in eugenic sterilization.

Sterilization for biological and sociological purposes has been promoted by eugenists, sociologists, and psychiatrists for many years, until now there is scarcely a protest raised, except from certain religious sects.

The writer and many others concur with Dr. C. B. Farrar, of Toronto, who states that "The greatest single factor in social and economic inefficiency is mental defectiveness," and that "The greatest single cause of mental defectiveness is heredity." Dr. Farrar is of the opinion that the majority of the criminals are also mentally defective.

The above conclusion is well borne out by the Juke, and the Kallikak families, which run so true to Mendel's Law, and are so well known, they need only to be mentioned here. There are about 1,000,000 mental defectives in the United States at this time, with potentialities for the propagation of their kind. According to Laughlin's recent report, there are 500,000 feeble-minded, 200,000 confirmed epileptic, and nearly 300,000 insane persons in the United States at the present time. It is unfortunate that only one-fourth to one-third of this vast number can now be segregated; the rest are free to procreate without fear or hindrance. The average annual cost of segregation is $282.13 per capita, or a total cost of more than $282,000,000.00 annually, if they could all be segregated. The average life of an institutional patient is approximately ten years, making a total cost of more than $28,200,000,000.00 to segregate the present defective population of this country. This does not include the defective offsprings of normal parents, which will continue to form new defective strains.

A practical solution of this vast problem was first attempted by the legislative body of Pennsylvania in 1905 when it passed an act authorizing sterilization, but this was vetoed by the Governor at that time. Indiana, in 1907, was the first state to legalize sterilization. California and Connecticut enacted similar laws in 1909. New Hampshire, New Jersey, and Wisconsin followed with similar legislation. Up to 1928, twenty-three states had laws providing for sterilization of the

*Read at the Nervous and Mental Disease Clinic of the sixty-first annual meeting of the Medical Society of Virginia, in Norfolk, October 21-23, 1930.

mentally unfit; and thirteen states have legalized asexualization of the "imbecile, criminal, and rapist." The time is probably already ripe for the asexualization (by which we mean castration, not simple sterilization), of the state criminal, for eugenic and physiological purposes. They could then be paroled after sufficient evidence of good behavior, without fear of reproduction, and in many cases, perhaps, without further criminal tendencies. In this connection, attention is called to the subduing effect upon the behavior of animals after castration. This operative procedure and its statutory law, however, must not be confused with the one now in vogue for the sterilization of the mentally unfit, as has been done in many states with its attending difficulties.

The first case sterilized in a state institution was in California in 1910, and this state has continued to be the most active state in this preventive measure. California has sterilized more mental defectives for eugenic purposes than all the other states combined. Up to January, 1928, there had been 8,515 eugenic sterilizations done in the United States, with most satisfactory results, of which 5,820 were done in California. The records of California show that only a small per cent were unsuccessfully sterilized, and there has not been an operative death since 1920, covering a series of more than 3,000 operations. Primary union was obtained in all but 6.5 per cent, and wound infection occurred in only 2.2 per cent.

The State of Virginia has become active in this work in recent years. Up to July 1, 1930, 599 cases had been sterilized in this state for eugenic purposes, with most encouraging results. There have been no deaths, no severe complications, and only one failure so far recorded. Many cases have had the advantage of having other necessary surgery done, removing pathological tissue, etc., at the time of the sterilization operation, which has greatly improved the general health of the patient. Through the splendid cooperation of the superintendents of the four state hospitals now doing this work, it was possible to obtain the information compiled in the accompanying chart.

Virginia was the first state to pass a sterilization law that stood the test of the Supreme Court of the United States, for the framing of which law, credit is due Dr. J. S. DeJarnette, Superintendent of the Western State Hospital. On May 2, 1927, the Supreme Court of the United States upheld the constitutionality of the Virginia law by a vote of eight to one, in the test case of Carrie Buck *vs.* John H. Bell, Superintendent of the Epileptic Colony (No. 292, October term, 1926.) The

599 Eugenic Sterilizations in Virginia Previous to July 1, 1930

Name of Hospital	Eastern State	Central State	State Ep'l'l Colony	Western State
Number Sterilized:				
Male	None	24	60	69
Female	44	131	234	37
Mental Types:				
Epileptic	1	7	36	6
Manic Depressive	6	11	0	59
Dementia Precox	15	54	0	22
Feeble-Minded	22	83	258	19
Number Severe Complications:				
Infections, etc.	None	None	None	None
Number of Deaths:	None	None	None	None
Number Failures:				
Male	None	None	None	None
Female	1	None	None	None
Youngest Case Operated:				
Female	15 Yrs.	16 Yrs.	14 Yrs.	15 Yrs.
Oldest Case Operated:				
Female	40 Yrs.	40 Yrs.	40 Yrs.	37 Yrs.
Additional Surgery:				
Appendectomy	37	129	225	12
Salpingectomy	0	43	5	7
Oophorectomy	2	20	3p.	5
Suspension U.	6	2	6	9
Freeing Adhesions	1	0	0	4
Type of Anaesthesia Used:	General	Novocain Ether	Ether Sod. Amyt. Novocain	Novocain Ether
Number Returned Home:	24	?	294	81

Virginia law does not include asexualization of the criminal, but provides for the sterilization of "hereditary forms of insanity that are recurrent, idiocy, imbecility, feeblemindedness or epilepsy." With this as a precedent, other states may shape their laws after the Virginia law without fear, unless it be contrary to the constitution of the individual state. This is a long step toward race betterment, crime pre-

vention, and the cure of social ills, as such are caused, we are told, almost wholly by mental or moral defectives who should not reproduce like kind to be a burden to the state.

In addition to the favor eugenic sterilization has won in America, it is now advocated in Belgium, England, Australia, Japan, and New Zealand.

Immediate financial results to the state can be expected as soon as the patients are discharged or paroled, but sociological results will probably not be noticeable until the lapse of time of one or more generations, except perhaps with the asexualization (castration) of the criminal, which may show improvement, in behavior, regarding criminal tendencies, within a few years in certain cases.

Eugenic sterilization readily commends itself in the light of our present educational teachings. Every boy and girl attending high school knows that Burbank, Davenport, and others achieve their successes by selecting the best specimens for reproduction. Farmers and stock breeders (since the days of Eden) have done the same thing to the best of their ability, whereas statistics show the American people breed chiefly from their worst, as every civilization has done since Adam, and we read their history only in their ruins. Let us stop the reproduction of the unfit and save the Nation.

BIBLIOGRAPHY.

Jones, Henry A.: Is the State of Rhode Island Ready to Have a Law Authorizing the Eugenic Sterilization of the Mental Defectives and Criminals? *Rhode Island Med. Jour.* May, '25.

Smith, N. R.: Will Sterilization Decrease Epilepsy? *Jour. M. S. M. S.* '25.

Popenoe, Paul: Eugenic Sterilization in California. *Jour. Social Hygiene*, No. 13, pp. 257-68, May, '27. (Series can be obtained from E. S. Gosney, 26 N. Marengo Ave., Pasadena, Calif.)

Bidwell, C. H.: The Question of Sterilization of the "Mental Defects." *Med. Jour. S. Africa.* March, '24.

Randall, H. E.: Sterilization in the Feeble-Minded. *Jour. M. S. M. S.*, Vol XXIV, No. 2. February, '25.

Williams, J. Whitridge: Indications for Therapeutic Sterilization in Obstetrics. *Jour. A. M. A.*, Vol. 91, pp. 1237-1243. October, '28.

Dickinson, Robert L.: Sterilization Without Unsexing. *Jour. A. M. A.*, Vol. 92, No. 5. February, '29.

Worthington, George E.: Compulsory Sterilization Laws. *Jour. Social Hygiene*, Vol. XI, No. 5. May, '25.

Dight, C. F.: Sterilization Procedures and Its Success in California Institutions. *The Jour. Lancet*, pp. 462-463. October, '27.

Whitney, E. A.: Eugenic Sterilization of the Mentally Unfit. *Med. Jour. and Record.* June 19, 1929.

Pierson, Clarence: Are We Sufficiently Progressed Scientifically for the Legal Sexual Sterilization of Inmates of State Institutions in Certain Cases? *New Orleans Jour. Med. and Surg.*, pp. 57-82. December, '29.

Farrar, C. B.: Social Aspects of Mental Deficiency. *Jour. Canadian Med. Assoc.*, p. 1233. 1925.

Laughlin, Harry H.: Legal Statutes of Eugenic Sterilization *Birth Control Review.* '28.

Stiener, R. E. L: Eugenics In Oregon. *Northwest Med.*, Vol. XVI, No. 12. '27.

Gibbons, R. A.: Sterilization of Mentally Defectives. *British Med. Jour.*, pp. 226-228. August, '28.

Whitney, E. A: Eugenic Sterilization. *Penn. Med. Jour.* October, 1929, Vol. XXXIII, No. 1, pp. 18-22.

Barr, M. W.: Some Notes on Asexualization: With Report of Eighteen Cases. *Jour. of Nervous and Mental Diseases*, Vol. 51, No. 3. March, 1929.

Putney, Chas. W.: Sterilization Without Unsexing. *Va. Med. Monthly.* June, 1930.

Vruwink, J., and Popenoe, P.: Postoperative Changes in Libido Following Sterilization. *Jour. Am. Obst. & Gyn.*, 19; 1-152. January, 1930.

Editorial: Functions of the Interstitial Cells of the Testis. *Jour. A. M. A.* November 9, 1929.

Gordon, Alfred: The Social Aspect of Mental Abnormalities and the Problem of Eugenics. *Va. Med. Monthly.* October, '29.

Bell, J. H.: The Protoplasmic Blight. *Va. Med. Monthly.* August, 1930.

Professional Building.

FOREIGN BODIES IN THE URINARY BLADDER.

By HORATIO N. DORMAN, M. D., F. A. C. S., Washington, D. C.

Foreign bodies in the urinary bladder always present problems of interest to the urologist. Determination of the cause of entrance as well as the proper method of removal often tax our ingenuity. The frequency of this condition, in general practice, as well as the fact that most patients seek relief from the family doctor first, would lend something of a general interest to the subject and make it worthy of our attention at this time. I shall not weary you with long bibliographies on the subject or go into any details regarding the many cases that have been reported in the past, but rather try to present, very briefly, the salient points in the symptomatology, diagnosis and modern methods of treatment, and, finally, have something to say about the cases we have seen.

Foreign bodies in the urinary bladder may be classified under two general headings: (1) those formed within the body itself and (2) those entering the body from the outside. Calculus formations illustrate the first group. They will not be considered in this presentation. The second group, namely, those bodies entering the bladder from the outside, comprise a large variety of objects which may gain entrance in one of three ways, first, by accident,

as in traumatic penetration of the bladder wall. In this way pieces of wood, clothing, and bullets often lodge in the bladder. Second, those objects which gain entrance directly or indirectly by the hand of the doctor. These include catheters and filiforms which are broken off or cut off in the bladder together with such articles as suture material, gauze sponges and instruments left in the abdominal cavity at operation which later migrated to the bladder. Third, those objects which have been inserted into the urethra by the patient himself and have found their way through the urethra and into the bladder. The following is a partial list of articles which have entered the bladder in this way: Hair-pins, pencils, nails, tacks, pins, pipe stems, lampwicks, wax tapers, needles, knitting needles, fountain pen caps, thermometers, collar buttons, toothbrush handles, onion stalk six inches long, sprig of wheat, matches, perfume bottles and chewing gum.

The reason for self-induction of these articles into the urethra are: curiosity in children, insanity, masturbation, to relieve itching in the urethra, and attempts at abortion.

Symptomatology: The symptoms depend upon the character and size of the foreign body as well as the length of time it has been in the bladder. There may be no symptoms at all for days or even weeks. Frequency, urgency, and pain are the more common symptoms. Sharp penetrating objects produce blood, and freely movable objects may produce dribbling or retention by obstructing the vesical outlet. Terminal pain is often marked. General symptoms may come on later as a result of added infection and are manifested by chills, fever, sweats and general lassitude.

Diagnosis: A correct history would usually be sufficient to establish a diagnosis, but it is noteworthy that these patients who insert a foreign body seldom ever tell the truth. On the contrary, they usually have a "cock and bull" story made up to mislead the examining doctor. Metallic objects or bodies that have been in the bladder for some time become coated with urinary salts and can be picked up by the X-ray. A sound will often distinguish one of these hard stony objects. The cystoscope is the most accurate way of making a diagnosis provided it can be used. The cystoscope not only settles the question of the presence or absence of a foreign body, but by its use the urologist determines the character, number, size, and position of the foreign body or bodies and is thus enabled to decide upon the proper method of removal.

Complications: *Perforations* of the bladder wall may occur at the time the foreign body enters, or, as more often happens, at a later date. *Infection* usually occurs early and may arise from the foreign body itself or result from constant irritation between the foreign body and the bladder mucosa. With the advent of infection the symptoms are much more pronounced. *Incrustation* of the foreign body with urinary salts is the most important complication. This stone formation takes place very rapidly, in many cases, and a large calculus may form on a small foreign body, before the patient presents himself to the doctor for relief. Turner reports a case of stone removed by supra-pubic cystotomy which measured 5x4x3 centimeters, which had a piece of wax as a nucleus. In one of our cases several moderate sized stones had formed around broken off pieces of a catheter which the patient had been using on himself.

Elongated bodies, especially if stationary, become incrustated very rapidly. Here the stony formation begins at the central part and extends towards the ends. Bandler, McFadzean, and others have reported large stones formed around hair-pins. Ballenger and Elder removed a stone formed around a brass pin and Walther found a large stone formed around the central portions of a wire nail. The nail itself was four and one-quarter inches long with each end firmly fixed in the bladder wall.

Treatment: The method of removal of any foreign body depends upon its character, size, and accessibility. Paraffin, chewing gum, and waxy substances can be removed by solvents, such as gasoline, alcohol, or paraffin oil. Lohnstein, Weiss and Carples have used this method successfully. A catheter is passed and the bladder emptied. About 150 cc. of sterile water is then injected to float the foreign body and protect the trigone. The catheter is then inserted a little farther and the solvent injected. After being allowed to remain thirty minutes the solvent is withdrawn and then the water. This procedure is harmless and may be repeated. The cystoscopic rongner is the most useful instrument we have for removing small bodies. Small stones and a great variety of small foreign bodies can be removed with this instrument. Filiform catheters can

be grasped and withdrawn; hair-pins can be removed by grasping them at the curved end. The Young ronguer was successfully used to remove five of the foreign bodies in our series of eight cases. The lithotrite can be used for this purpose as well as to crush stones, incrustated catheters and other bodies too large to be removed in one piece. It was used successfully in two of our cases. These instruments aided by the cystoscope should be used whenever possible for the removal of foreign bodies. They are used with great success in the hands of the skilled urologist. By this method of removal, the period of convalescence is reduced to a minimum and the patient is saved many of the expenses and discomforts of a major cutting operation. Open operation must be resorted to when the size of the foreign body, or the patient's general or local condition, make endovesical treatments impossible. Large or impacted bodies, massive infection, or a strictured urethra call for open operation. A warning should be sounded against endovesical manipulations by the urologically untrained.

The eight foreign bodies which we have had to deal with consist of one soft rubber catheter, two hair-pins, several pieces of a catheter broken off in the bladder during repeated catheterizations, three filiforms and a portion of the bulbous end of a Pezzar catheter which had broken off.

Of our eight cases, four were introduced by the doctor and four by the patient. Six were diagnosed by the history, five of which were verified by cystoscopy. One was diagnosed by X-ray and one by cystoscopy alone.

Four of these foreign bodies were removed by Young's lithotrite, two by the ronguer, and one by open operation. This case was complicated by an hypertrophied prostate and the foreign bodies were removed at the time of the supra-pubic cystotomy. Our last case, that of a filiform, was treated in an unusual way which I will describe in some detail.

The patient, W. S., a single white man, sixty-eight years of age, came to the dispensary complaining of difficulty on urination. Dr. Herschman treated the patient and in the course of his examination, the end of the bougie he was using broke off in the bladder and remained there attached to the filiform. The patient was sent to the ward where I saw him. I attempted to pass a bougie à boule, but was unsuccessful. I then passed a filiform and succeeded in dilating his stricture up to size twenty, by passing successive bougie followers. On attempting to withdraw my last bougie, it was noted that it hung up in the deep urethra and would come out only by exerting considerable traction. I continued to pull and when the distal half of my filiform came through the meatus it was found to be twisted and knotted around the old filiform which Dr. Herschman had lost, and which was found to be coiled up on itself in a crazy knot (Fig. 1). Examination of the specimen showed the filiform, and broken off follower tip, to be intact. Hence, no further treatment was necessary.

Conclusions: 1. A large number of patients with foreign bodies in the urinary bladder can be saved a cutting operation by the intelligent use of the lithotrite and ronguer.

Fig. 1.—Knotted filiform removed from the bladder through the urethra, shown attached to the filiform by which it was removed.

Name	*Age*	*Foreign Body*	*Inserted by*	*Diagnosed by*	*Removed by*
A. B. F.	14	Catheter	Patient	Cystoscopy	Lithotrite
R. B.	37	Hair-pin	Patient	X-ray	Ronguer
D. R. G.	42	Cut filiform	Doctor	History	Ronguer
F. H. C.	40	Tip of Pezzar cath.	Doctor	History	Lithotrite
E. A. B.	81	Pieces of catheter	Patient	History & Cyst.	Open operation
I. S.	34	Hair-pin	Patient	History	Ronguer
D. T. C.	43	Filiform	Doctor	History	Ronguer
W. S.	68	Filiform	Doctor	History	Filiform knot

2. Ease of diagnoses and removal of foreign bodies by endovesical measures make this the method of choice, in most cases.

3. The expense is less, and the time lost from work is materially shortened.

BIBLIOGRAPHY

1. Turner, J. H.: Two Unusual Foreign Bodies in Male Bladder, *J. Urol.*, 1924, xi, 581-5.
2. Bandler, C. G.: Unusual Foreign Body with Vesical Calculus, *Am. Jour. Surg.*, 274-275, August, 1929.
3. McFadzean, J.: Foreign Bodies Causing Calculus Formation, *Brit. M. Jour.*, 1, 665, April 21, 1928.
4. Ballenger & Elder: A Stone in the Bladder with Pain as a Nucleus, *South. Med. Jour.*, xvii, 959.
5. Walther, H. W. E.: Removal of Twenty Penny Wire Nail in the Bladder, *N. Orleans Med. & Surg. Jour.*
6. Lohnstein, H.: *Berl. Klin. Wchnscher.*, 1907, xliv, 721.
7. Weiss, F.: *Wein. Klin. Rundsch.*, 1909, xxiii, 421.
8. Carples, H. B.: Foreign Bodies in Urinary Bladder, *S. G. & O.*, Vol. 19, No. 3, September, 1919, pp. 315.
9. Briggs, W. T.: Foreign Bodies in the Bladder, *Jour. Urol.*, Vol. xv, No. 4, April, 1926, pp. 383.
10. McMartin, Chas.: Vesical Calculi on Foreign Bodies, *Jour. Urol.*, xiii, 219, February, 1925.
11. Hawkins, J. A.: Foreign Bodies in the Urinary Bladder, *Urol. & Cutaneous Rev.*, 1925, xxix, 389.
12. Bethune, C. W.: Case Report Foreign Body in Bladder, *Jour. Urol.*, xvi, July, 1926, pp. 149.
13. Gilbert, A. C.: Removal of Chewing Gum from Bladder, *Dallas Med. Jour.*, 1926, Vol. xii, 110.
14. Pomeroy, F. B.: Foreign Body in Urinary Bladder, *Jour. Urol.*, 1926, xvi, pp. 377.
15. Goodman, W. D.: Chewing Gum in the Male Urinary Bladder, *Jour. Urol.* 22, 335-337, September, 1929.
16. Bond, S. P.: Foreign Bodies in the Bladder, *Jour. Am. Med. Assn.*, 1924, lxxxiii, 1163.
17. Duncan, I. G.: Perfume Bottle in Man's Bladder, *Urol. & Cutaneous Rev.*, 31, 514, August, 1927.
18. Nelson, A. W.: Foreign Bodies in the Bladder, *Jour. Med.*, 8:78-80, April, 1927.
19. Nagorski, L.: Foreign Bodies in Bladder Resulting from Masturbation, *Med. Jour. & Record*, 125, 666-7, May 18, 1927.
20. Lett, H.: Two Cases of Foreign Body in Urinary Bladder, *Brit. Med. Jour.*, 1:138-9, January 22, 1927.
21. Smith, E. O.: Two Cases of Foreign Body in Urinary Bladder, *Jour. Med.*, 7:655, February, 1927.
22. Levy, M. L: Foreign Body in Bladder (Thermometer), *J. A. M. A.*, 90:115-16, January 14, 1928.
23. Vermooten, V.: Foreign Bodies—Grass, *New Eng. Jour. of Med.*, 198, 139-40, March 8, 1928.
24. Timberlake, G.: Foreign Bodies, *Jour. Florida Med. Assn.*, 14, 609-12, June, 1928.
25. Harvey, F.: Foreign Bodies, Unusual Case of Pain and Haematuria, *Brit. Med. Jour.*, 2:101, July 21, 1928.
26. LaRoque, G. P.: Gauze Sponge Spontaneously Expelled from the Urinary Bladder, *S. G. & O.*, V. 28, No. 5, pp. 523-4, May, 1919.
27. White, E. A., and Holm, A. J.: Foreign Bodies in the Urinary Bladder, *Ill. Med. Jour.*, September, 1927.

208 *Stoneleigh Court.*

TREATMENT OF HAY FEVER.*

By W. E. JENNINGS, M. D., Danville, Va.

Hay fever and asthma, along with eczema, urticaria and a few other conditions, are found in individuals who are affected with allergic conditions which are caused by specific proteins.

Both hay fever and asthma are constitutional rather than local conditions, although the local symptoms predominate.

A great many individuals are partially susceptible to the pollens in the various plants, without, however, showing, any manifestations of the disease. These people go along very well until they are exposed to an unusual amount of the pollen to which they are susceptible. Then an attack of hay fever is brought on, their resistance is lowered, and they become chronic sufferers from hay fever. This condition tends to become exaggerated until they are sensitive to a number of pollens that had never before given them trouble.

In order that we may treat any disease intelligently, we must first familiarize ourselves with the cause and the pathology.

As stated before, hay fever is caused by the introduction of a foreign protein into the body in sufficient quantities to bring about an allergic reaction, and is usually caused by the pollen of some weed or flower, but it may be caused by house dust, feathers and an infinite variety of common causes.

In this connection, it might be well to state that the bright colored flowers have heavy pollen which is carried by bees and insects and is not wind borne. For this reason, flowers and golden-rod may for all practical purposes be disregarded as the cause of this malady.

The most common causes are the blooms from the various trees in the very early spring, and this does not include fruit-bearing trees, grasses in later spring and early summer; in the fall the rag weed and cockleburr are practically always the offending weed. The pollen from ragweed is extremely light and is carried for long distances by a light wind, hence the wide spread number of cases from this cause.

It is stated by an authority that the air up to an elevation of 4,000 feet is about as heavily polluted by the ragweed pollen as at sea level. Consequently, any hay fever resort under this

*Read before the South Piedmont Medical Society, at Danville, Va., November 25, 1930.

elevation does not produce immunity from the disease.

People who go to the seashore often find relief, but only when the wind is from the water and towards the land. The reason for this is that when the wind is coming from the water, the atmosphere is free from pollen.

Once hay fever has begun the condition may be aggravated by a deviated septum or infection in an antrum or sinus, and in practically all chronic cases there is also some bacterial growth and infection which further complicates the treatment.

Before active treatment is begun, the offending pollen must be determined. This is done by one of several methods, but the one most favored is the scratch method. The inner surface of the forearm or the back are the locations most often used. The surface of the skin is cleaned with alcohol and dried.

A series of superficial incisions are made usually four in a row and about one inch apart. The length of the incision should be about one-eighth to one-quarter inch in length and made through only the outer layers of the skin. Very little, if any, blood should be drawn. A Bard Parker or a Von Pirquet knife is used. Personally, I prefer the Von Pirquet because the incision can be made with more uniformity. A drop of a 1 per cent solution of sodium hydroxide is placed on each scarification and a powdered extract of the pollen material to be used is placed on each scarification and rubbed in. Of course, only one pollen extract is used on any one scarification.

Where a reaction occurs, an urticarial wheel is noted. And here it takes experience and training to properly interpret the reaction. In some persons the reaction will be very marked and a reaction to a great many substances will appear. In other persons the reaction is very slight and occasionally absent in persons who are sensitive. It is in these extreme cases where good judgment is required.

Another method is injection of a concentrated solution of the suspected pollen into the superficial layers of the skin, when the reaction is noted.

The treatment is divided into the palliative and curative. Only the curative treatment will be gone into here, as the palliative treatment is well known as to the methods used and is usually ineffective. The curative treatment consists of the injection of a solution of the offending material into the skin until the person's immunity is raised until an attack will not be brought on by coming in contact with the pollen to which he has been sensitive.

The injections are usually begun, using a one to ten thousand solution and one-tenth of a cubic centimeter at a dose. In an unusually highly sensitive person it is usually well to begin with a one to twenty thousand solution. The treatment should be given every other day or every third day, increasing one-tenth of a cubic centimeter at each dose unless the patient shows too much reaction. A satisfactory local reaction will show redness and slight swelling, and should be about the size of a quarter; if the reaction is larger than half a dollar, too much or a too strong solution is being used. When nine-tenths of the one to ten thousand solution has been reached, we then begin with one-tenth of a cubic centimeter of a one to five thousand solution, and this is run up to nine-tenths, after which we change to a one to one thousand solution and go up to nine-tenths of a cubic centimeter. When this dose is reached, this is kept up about once a week until the time for that particular patient's hay fever to begin.

To get the best results this treatment should begin at least three months before the expected time for the patient's hay fever.

As stated before, there is practically always some local infection present with this condition, and for this reason the results will be better if a course of treatment is given by using a vaccine made from the germs most prevalent in the nose and throat. Here it is better to begin with a small dose and gradually increase until a large dose does not produce a severe reaction. So far as practical results are concerned, it does not seem to make a great deal of difference whether stock or autogenous vaccines are used.

Miscellaneous

"Tuberculosis, the Foe of Youth," the Campaign Slogan of The Virginia Tuberculosis Association.

New knowledge regarding tuberculosis enables the Virginia Tuberculosis Association to begin this Spring an intensive effort to fight tuberculosis in the sector of youth, for the 1,400 tuberculosis associations of the United States are this year dealing with the subject

of this disease as a menace to the young boys and girls. Despite the general reduction in mortality from this disease in the past twenty years, it has the high death rate of 120 per 100,000 in the age group of twenty to twenty-four, while among the population as a whole the rate is only seventy-six. Tuberculosis still kills more persons between eighteen and thirty-five than any other disease, and a great part of the reduction in the general death rate is in the group of children from five to fourteen years of age, while from fifteen to nineteen years the rate is seventy-two—even less than the general rate for all ages. The mortality is much greater, therefore, between twenty and twenty-five than between fifteen and twenty, and begins a very gradual decrease from twenty-five to thirty and comes down more rapidly after about thirty-five years of age.

As it has been found where extensive study of high school groups has been made that boys and girls who are active in high school work, leaders in athletics, and apparently in good health, have actually tuberculosis smoldering within them, soon to break into flame, the emphasis in this educational campaign will be placed upon the disease as a foe to this group.

Talks will be made, moving pictures shown, thousands of pamphlets distributed and posters displayed. The posters picture David and Goliath—"For he was but a youth" . . . yet he slew Goliath . . . and today he can conquer, with Knowledge, his enemy, tuberculosis.

Everywhere the Virginia Tuberculosis Association is conducting this campaign young people are being urged to see their doctors, so that with the modern means of tuberculin test and X-ray the foe of youth may be discovered and controlled. The Virginia Tuberculosis Association appeals to the medical profession to aid the youth of Virginia.

Proceedings of Societies

The Southwestern Virginia Medical Society

Held its Spring meeting in Wytheville, March 18th and 19th, in cooperation with the Department of Clinical Education of the State Society. The meeting was well attended and interesting voluntary papers were presented by members—Drs. B. F. Eckles, Galax, T. K. McKee, and R. D. Campbell, of Saltville, G. Hunter Wolfe, Abingdon, and A. P. Jones and W. W. S. Butler, of Roanoke—in addition to those by the invited guests. There were some changes in the guests from names appearing on the printed program, Dr. J. E. Wood, University, substituting for Dr. D. C. Smith, and Dr. L. T. Royster, also of University, substituting for Dr. John A. Hornsby. Dr. John A. L. Kolmer, Philadelphia, was the third guest.

Dr. E. G. Gill, Roanoke, president, presided, and Dr. J. G. Davis, Jr., Christiansburg, substituted for the secretary, Dr. A. M. Showalter, who was unable to attend. The Society will hold its next meeting at Marion, Va., in September, 1931.

The Wise County Medical Society

Held its regular meeting on March 4th, at the Virginia Coal Operators' Assembly Room, Norton, Va. Dr. S. P. Gardner, Arno, president, presided. A paper on "Retrospect of Fifty Years' Practice" was presented by Dr. W. B. Barham, of Big Stone Gap. The principal business at this meeting was the annual election of officers, which resulted as follows: President, Dr. J. G. Bentley, Blackwood; vice-presidents, Drs. T. J. Tudor, Norton; A. W. Lowman, Stonega, and C. H. McFarlane, Dunbar; secretary-treasurer, Dr. W. R. Culbertson (re-elected), Norton.

The Southside Virginia Medical Association

Held its regular quarterly session, in conjunction with the Department of Clinical Education of the Medical Society of Virginia, at the Central State Hospital, in Petersburg, Va., March 10th. The program consisted of a symposium on mental diseases with Dr. William A. White, of Washington, D. C., as leading speaker. All the papers on the program were read and fully discussed. At the conclusion of the program, the visitors were tendered a delightful dinner by Dr. Henry and his staff.

Short talks were also given by Dr. J. A. Hodges, Richmond, president; Dr. I. C. Harrison, Danville, president-elect; and Dr. G. F. Simpson, Purcellville, chairman of the Committee on Public Relations of the Medical Society of Virginia.

This was considered the best meeting in the history of the society, there being an attendance of 150. The general desire was expressed that the society meet at the Central State Hospital each year in March.

Dr. Ruth Mason, Petersburg, is president

of this society, and Dr. R. L. Raiford, Franklin, secretary.

Arlington County Medical Society.

At the last meeting of this Society, Dr. John H. Gilligan, Clarendon, was elected president, and Dr. B. H. Swain, Ballston, was re-elected secretary.

Patrick-Henry Medical Society.

Officers of this Society elected for the year 1931 are: President, Dr. H. G. Hammond, Martinsville; vice-president, Dr. C. W. Thomas, Martinsville; and secretary-treasurer, Dr. W. N. Thompson, Stuart.

Alleghany-Bath County Medical Society.

At the last meeting of this Society in Clifton Forge, Va., February 26, Dr. J. Allison Hodges, President of the Medical Society of Virginia, gave an address on Federal and State Control of Medicine and the ramifications thereof. This Society meets every two months. Dr. B. R. Hudnall, Covington, is president; Drs. R. A. Warren, Hot Springs, and W. M. Revercomb, Clifton Forge, vice-presidents, and Dr. R. P. Hawkins, Jr., Clifton Forge, secretary.

The Lee County Medical Society,

At its annual meeting on March 23rd, elected Dr. C. H. Henderson, of Bonny Blue, as president, and re-elected Dr. W. J. Innes, of Pennington Gap, as secretary-treasurer. Meetings are held monthly. It is expected that a greater interest will be manifested in the meetings now that the new Lee County Hospital has recently been opened at Pennington Gap.

The Loudoun County Medical Society

Held its regular meeting on March 17th, at the home of Dr. William Meyer, in Herndon, Va. The principal matter receiving attention at this time was a continuation of the discussion of the action of the Board of County Supervisors, which was taken up about the close of the February meeting. Dr. G. F. Simpson, Purcellville, is president, and Dr. W. O. Bailey, Leesburg, secretary.

Woman's Auxiliary,
to the
Medical Society of Va.

Wonderful Work Accomplished by Norfolk Auxiliary.

It has been definitely proven that when the Norfolk County ladies undertake a work they can accomplish something really worthwhile. This is demonstrated by the wonderful results achieved in their latest project.

The Woman's Auxiliary to the Norfolk County Medical Society planned to have a card party on February 13th to raise at least $600 of the amount sought in Norfolk for the Tidewater Tuberculosis Hospital. They worked so hard and so well that they secured about 1,300 participants and the party had to be held in three sections—one in the morning, and two in the afternoon at different places. Prizes were given at each table and several door prizes were awarded. Candy and decks of cards were sold at all the parties, with the result that by early in March, the Auxiliary had in bank $1,591.70 from the three parties, with a little more still to come in, as the final report was not to be had until the executive board meeting on March 31st.

Mrs. W. P. McDowell, president of the Auxiliary, appointed various committees to have charge of arrangements for the party. In addition to this, the membership of the Auxiliary was divided into fourteen teams, each having a captain and a lieutenant.

The wonderful results accomplished meant that not a few but practically all members of the Auxiliary had to work and work hard, but we are sure they feel fully justified for the service given. So important did the Norfolk newspapers consider this event, that they gave much space to announcements and featured it with the publication of photos of a number of the ladies sponsoring the project.

State Executive Board Meeting.

The Executive Board of the Woman's Auxiliary to the Medical Society of Virginia had its mid-winter meeting at the home of the President, Mrs. J. Allison Hodges, Richmond, on February 28th. All but two members of the Board attended.

At this time, Mrs. William F. Drewry, Richmond, was appointed chairman of a Public Relations Committee to cooperate with that of the State Medical Association.

Two points especially stressed at this meeting were: Education in public health matters, and the need of trying to organize new auxiliaries in Virginia, there being only a few active ones at this time.

It was stated that there is now in progress an intensive campaign for subscriptions to *Hygeia*, and that this will continue through

the month of May. The circulation manager of *Hygeia* has offered the auxiliaries $1.50 of each new $3.00 subscription to the magazine during this campaign. Mrs. R. N. Herbert, 1509 Stratton Avenue, Nashville, Tenn., is chairman of the National committee in charge of *Hygeia* subscriptions.

Last year, the Virginia Auxiliary, under the able chairmanship of Mrs. Charles Phillips, 310 Summerset Avenue, Richmond, netted quite a neat sum from the commissions on the *Hygeia* subscriptions. As chairman again this year, she will be glad to offer any assistance possible to local auxiliaries. One of the aims of this committee is to get *Hygeia* in every school and library in the State. Some auxiliaries use the commissions received for subscriptions to send copies of the magazine to schools unable to subscribe.

Interesting Work of the Kentucky Auxiliary.

The Woman's Auxiliary to the Kentucky State Medical Association selected as a major objective for this year the furtherance of the Jane Todd Crawford Memorial. The idea of that Auxiliary is to invite each woman, grateful for the benefits of abdominal surgery, either for herself or some loved one, to contribute $1.00 to the fund. The Kentucky Committee in charge of this memorial was organized and started work December 9, 1929.

Following the meeting of the Southern Medical Association in Louisville, last Fall, members motored to Frankfort, for the purpose of attending the unveiling at the State Capitol of a statue of Ephraim McDowell, the "Father of Ovariotomy." Mrs. Jane Todd Crawford, was the first patient upon whom Dr. McDowell performed an ovariotomy, and for this reason is called the "heroine of ovariotomy." Therefore, the Kentncky Auxiliary wishes to honor her also. It should be a matter of especial interest to Virginia women that Mrs. Crawford was a native of Virginia as was also Dr. McDowell, both having been born in Rockbridge County, this State. Any one wishing to make a contribution to this fund should send it to Mrs. William C. Dugan, Clark, Ky.

The Truth About Medicine

In addition to the articles enumerated in our letter of January 31st, the following have been accepted:

Health Products Corporation
Marine Liver Extract (White)
Schering Corporation
Iopax

The following articles have been exempted and included with the List of Exempted Medicinal Articles (New and Non-official Remedies, 1930, p. 477):

Chas. Pfizer & Co.
Cinchophen—Pfizer
G. D. Searle & Co.
Ampules Sodium Thiosulphate (Searle) 5 c.c.+
Ampules Sodium Thiosulphate (Searle) 10 c.c.+

NEW AND NON-OFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Non-official Remedies:

Procaine Borate.—A borate formed by the interaction of *p*-aminobenzoyl-diethylaminoethanol (procaine base) and boric acid. It contains 58.1 per cent of *p*-aminobenzoyl-diethylaminoethanol Procaine borate closely resembles procaine hydrochloride in its actions and uses. When injected subcutaneously, procaine borate exerts a prompt and powerful anesthetic action. It is non-irritant. Its action is enhanced by the addition of a small amount of epinephrine, as in the case of procaine hydrochloride.

Procaine Borate—Searle.—A brand of procaine borate—N. N. R. It is also supplied in the form of ampules procaine borate and epinephrine 1 c.c., containing procaine borate—Searl 0.0216 Gm. and epinephrine 0.00017 Gm. in 1 c.c. G. D. Searle & Co., Chicago.

Liver Extract—Fairchild.—A complete concentrate of an aqueous extraction of fresh edible liver, freed of connective tissue, lipoid, and heat coagulable protein. It is marketed in vials, each containing the material derived from 100 Gm. of fresh liver. Liver extract-Fairchild is used in the treatment of pernicious anemia. Fairchild Bros. & Foster, New York. (Jour. A. M. A., February 14, 1931, p. 529).

Marine Liver Extract—White.—A liver extract representing the water soluble fraction obtained from the livers of fish of the Gadus family in a glycerol-water solution. 100 c.c. represents fresh liver, 3,027 Gm. (1 fluid ounce represents 2 pounds avoirdupois). Controlled clinical observations show that in pernicious anemia rapid improvement may be expected following the administration of marine liver extract—White. Health Products Corporation, Newark, N. J.

Pollen Extracts—Arlco.—The following pollen extracts—Arlco (New and Non-official Remedies, 1930, p. 29), have been accepted: Grass Mixture No. 1, Pollen Extract—Arlco; Grass Mixture No. 2, Pollen Extract—Arlco; Grass Mixture No. 3, Pollen Extract—Arlco; Ragweed Dwarf and Giant Mixture Pollen Extract—Arlco; Ragweed Mixture Plus Burweed Marsh Elder Pollen Extract—Arlco; Spiny Amaranth Pollen Extract—Arlco; Western Water Hemp Pollen Extract—Arlco. Arlington Chemical Co., Yonkers, N. Y. (Jour. A. M. A., February 21, 1931, p. 613).

PROPAGANDA FOR REFORM

Atrophy of the Liver Due to Cinchophen Preparations.—When cinchophen was introduced into therapeutics (reinforced by the trade name "Atophan"—the tophi remover), its striking effect on the elimination of uric acid captured the clinical imagination. It was soon seen, however, that Atophan belied its name for the tophi refused to be removed. The drug was found, however, to be an effective analgesic. Various esters and derivatives were ad-

vertised extensively for the benefit of those who do not like the flavor of cinchophen and for the benefit of the manufacturers who could establish a monopoly on each little change. Cinchophen became a household remedy in the belief that it could do no harm. In 1923 evidence became available that the drug was causing fatal hepatitis. Since there are many other analgesics about as effective as cinchophen in many cases, and without this insidious danger, the use of the drug should be avoided whenever possible. Unfortunately, this is not simple, for a physician may be easily led into prescribing cinchophen when he does not know it. He may avoid it under the official names of cinchophen and neocinchophen or the original, therapeutically misinforming names of Atophan and Novatophan, but can be expected to keep in mind all the noninforming names which manufacturers invent? This illustrates the importance of the rule of the Council on Pharmacy and Chemistry which permits not more than one trade name—that applied by the discoverer. The rule protects those that use New and Non-official Remedies but can do little for others. The case is even worse for the patent medicines that are advertised to the public. While physicians, now that they have been warned, will restrict the use of cinchophen and watch for the first signs of danger, cinchophen preparations may be sold to the public in mixtures of secret composition. (Jour. A. M. A., August 2, 1930, p. 345).

Intoxicating Effect of Acetylsalicylic Acid and Coca-Cola.—A physician reports that young people in his community are using from 15 to 20 grains of acetylsalicylic acid (aspirin), dissolved in the soft drink Coca-Cola, as an intoxicating beverage. The effects are due chiefly to central depression caused by the acetylsalicylic acid fortified possibly by a direct central stimulant action of caffeine and other constituents present in Coca-Cola. The actions of acetylsalicylic acid are similar to those of small doses of alcohol, or of a weak alcoholic beverage or of the barbitals or bromides. When acetylsalicylic acid is taken with a beverage like Coca-Cola, advertised for its exhilarating effects, which may be caused by a direct central stimulation by caffeine or other constituents of the latter, it is easy to see how the effects of one can be fortified by the other. The continued use of such a medicated beverage may result in undesirable effects of the same general nature as those of narcotic habituation. Here is a most insidious evil, the re-enforcement of a popular and highly advertised beverage by a well advertised drug, both long suspected of dangerous tendencies. (Jour. A. M. A., November 1, 1930, p. 1366).

The Etiology of Ginger Paralysis.—Within the past year a peculiar form of paralysis has afflicted many persons, particularly throughout the Midwestern or Southwestern states. Evidence has accumulated that the malady is closely associated with the drinking of fluidextract of ginger. The latter has been sold extensively since the introduction of the Volstead Act, for beverage purposes, because of a ruling of the Prohibition Bureau to the effect that the official fluidextract of ginger is a nonpotable beverage, thus removing the restriction from its sale. It was concluded from the evidence that an adulterated and poisoned product was being circulated last winter. An investigation was undertaken by the United States Public Health Service and this has shown that the paralysis was caused by tricresyl phosphate present in some fluidextracts of ginger as an adulterant. (Jour. A. M. A., November 29, 1930, p. 1672).

Book Announcements

A Century With Norfolk Naval Hospital. 1830-1930. A Story of the Oldest Naval Hospital, the Medical Department of the Navy, and the Progress of Medicine through the Past One Hundred Years. . By RICHMOND C. HOLCOMB, M. D., F. A. C. S., Captain, Medical Corps, U. S. Navy. Printcraft Publishing Co. Portsmouth, Va. 1930. Octavo of 543 pages with 42 Illustrations. Cloth. Price, $6.50.

As this book is so intimately connected with the Medical History of Virginia—a subject in which we are all particularly interested at this time—it should have an especial appeal for Virginians and medical men interested in the history of this State. The author, Captain Richmond C. Holcomb, M. C., U. S. Navy, has served thirty-one years in the Navy, thus well fitting him to tell the history of one of its oldest hospitals. In reading this book, one comes in intimate contact with lives of men who have gone devotedly about their tasks anywhere over the seven seas that their duties may have taken them. With its assistance, one can search out the battles fought against communicable diseases largely in hospitals and laboratories, *sans* the spectacular, but nevertheless, assuring better health and longer expectation of life to posterity. One may also trace the vicissitudes of that great Tidewater Port—the natural outlet of the South. This would be an attractive addition to any doctor's bookshelf.

A Textbook of Laboratory Diagnosis. With Clinical Applications for Practitioners and students. By EDWIN E. OSGOOD, M. A., M. D., Assistant Professor of Medicine and Biochemistry, Director of Laboratories, University of Oregon, School of Medicine, Portland, Oregon; and HOWARD D. HASKINS, M. D., Professor of Biochemistry, University of Oregon, School of Medicine, Portland, Oregon. Philadelphia. P. Blakiston's Son & Co., Inc. 1931. Octavo of 475 pages. With Twenty-one Figures in the Text and Six Colored Plates. Cloth. Price, $5.00 net.

The Letters of Dr. Betterman. By CHARLES ELTON BLANCHARD, M. D., Author, Betterman II, on the Business of Medicine, Our Altruistic Individualism, etc. A Wise Success-Seeker Profits by the Experience of Those Who Have Camped Along the Trail Before Him. Medical Success Press. Youngstown, Ohio. 1931. Octavo of 157 pages. Paper. Price, $1.00.

Frontier Background of Washington's Career. Washington, the Man of Mind. Tributes to Washington. Washington the Farmer. Edited by Dr. Albert Bushnell Hart. Authorized by the Congress of the United States. Published under the direction of George Washington Bicentennial Commission, Washington Bldg., Washington, D. C. Pamphlets may be obtained upon request.

Virginia Medical Monthly

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Editorial

The Story of San Michele.

The publishers announce that the correct pronunciation of San Michele is San Me-Kay-lay and that the prounciation of Dr. Munthe's name is Axel Munt-e. Dr. Munthe is still living and is now over seventy years of age. He is Swedish and a physician. Reading the book we find that he has an intimate knowledge of continental Europe, that he was a great lover of birds, dogs, and other animals, that he practiced medicine with a leaning toward neuropsychiatry in both Paris and Rome, that he was a collector of objects of art, a man educated in medicine, zoology, literature, and history, an adventurous traveler, an egotist, a cynic, a humanitarian and a satirist and what concerns us in this review especially, a writer of exceptional ability.

A lady who knew Dr. Munthe personally and one who had a personal interview with him depict him as being cultured, courteous and personally modest and as having almost a mania for the establishment of bird sanctuaries. San Michele is, they say, as beautiful and as attractive as he pictures it. He is said to detest telephones, being photographed, wealthy Americans and those who are cruel to animals.

Many reviews of the book have been published, some of them by world-wide-known critics. All of them were complimentary, but inadequate in comprehension and in interpretation. This article has the same faults. It may be that the book, as a book, is unreviewable. "The Story of San Michele" is no story, but a series of observations, anecdotes and instances disjointed in time, place, and circumstance. Still, the book reveals much of the man, of his mind and of his time.

Why, then, should this book, which the publishers say they did not particularly advertise, mount up by its own momentum to a forty-eighth edition and become the world's, non fiction, best-seller? Why should this book have a wide appeal to large classes of people of various countries? Why should those hawks, the critics, be so lavish in its praise?

Let us consider for a moment some of the books of the past that attained phenomenal circulations. We are thinking of single books of compartively unknown authors and not a work of some great author. *Trilby* swept the reading world because of the mystery of the character of the hypnotist, Svengali, and the appeal of the friendship of Teddy, the Laird and Little Billee. The awe of the occult and the security of friendship were compared. It is hard to say why *If Winter Comes* had such vogue. Its characterizations were attractive, but not particularly fine or strong, but it did stir our sympathy for the bashful blundering man who had considerable force concealed. *Trader Horn's* success resembles somewhat that of the book we are discussing. It also had the appeal of glamourous adventure told convincingly by one who seemed to know. *The Bridge of San Lois Rey* was the story of human love; of the love of God for man, of that of the priest for the people, of brother for brother, of mother for daughter, of an old roué for

a waif. Two things in common had all of these books, one is that each book seemed to contain all that the author had to write and another is that they appeared sincere. But the main thing is that they were different from other books of their day. In spite, however, of everything that may be said, one cannot explain, or fail to be astonished at their vast popularity. There is a chord in human nature which when struck at the psychological moment reverberates throughout the world. None of these books, however, have remained popular or standard and it is safe to predict that "The Story of San Michele" will follow their fate.

The author of "The Story of San Michele" says it is not an autobiography nor the record of personal cases. In a sense we shall have to accept what he says, but, on the other hand, it must be true that his experiences are autobiographical and that his cases are elaborations of the histories of real patients. We suspect that he did this—he had an experience and in order that it be made into a "story" he has not hesitated to color and exaggerate it, to bring in imaginary incidents and to place it in attractive or gruesome surroundings. We may also believe that he had or knew of certain cases and that he took these cases, eliminated such symptoms as he wished, supplied others from another case or from his general knowledge and that he, thus, built up a case. Take, for instance, the story of the English woman's illegitimate son, or of the harlot and her dying child and the cases of the illness of the young wife of the old drunken doctor in Rome and that of the hysterical girl in Charcot's clinic. The circumstances at the home of the latter case, the description of the parents at the hospital in Paris and the dramatic ending all sound fictional. The interview with Charcot in which Dr. Munthe was dismissed from Salpetriere may have been entirely fictional, but if not his dismissal was probably due to other causes. Here let us read what Charcot's son says of this experience.

"*Editor The New York Times Book Review:*

I have received today a cutting of the New York Times Book Review of November 30, 1930, including a review by Margaret Wallace, on "Memories and Vagaries," by Axel Munthe.

In this review it is mentioned that "Dr. Munthe, as every one now knows, is a Swedish doctor, trained in France, under Charcot and Pasteur." Without contesting the literary and imaginative qualities of Dr. Munthe, I can certify that Dr. Munthe never was trained by my father, Professor Charcot, and most likely not by Pasteur. He may, during his stay in Paris, where he was never known as a distinguished specialist in the treatment of nervous diseases, have followed, as hundreds of others, some courses of Charcot, incidentally, but he was not trained by him and certainly never had the intimacy of which he boasts. Dr. Munthe is unlucky in the data he chose. I was, myself, a student at the Salpetriere then, and can certify that he was not one of his students, and that my father never knew him. All he says concerning Professor Charcot is false or literally translated from a mendacious book written by a French author who was incapable of passing his examination. The same concerning his stay in the wards of Dr. Tillaux, when he described himself as having played a prominent part during the memorable visit of our great Pasteur to the twelve (and not six) Russian peasants bitten by mad wolves. I was assistant to Tillaux, and the scene Dr. Munthe describes when he offered a cup of milk to one of the Russians was not played by him, but by myself, with a cigarette.

I would not have taken the liberty of troubling you with my broken English if Dr. Munthe (well known in Sweden, as I ascertained myself this summer, as very . . . imaginative and a self admirer), did not describe my father under colours absolutely false. He shows him as a hard man; in truth the prominent features of his character were an unlimited kindness, a nearly pathologic sensibility and an unbounded pity, not only for the sufferings of mankind but also for those of all animals

Frequently he quoted the verses of Shakespeare,

'And the poor beetle which we tread upon,
In suffering finds a pang as great as when a giant dies.'

With other quotations of the same author which he knew by heart, these verses were written by himself on the walls of his library and I read them there still, whilst writing this letter.

Neuilly-sur-Seine. J. B. Charcot."

Charcot was hardly as gross as this Swedish doctor paints him. There is a tinge of revenge in the author's treatment of this great French neurologist who, besides his contributions to our knowledge of hysteria, described amyotrophic lateral sclerosis of the spinal cord, specific trophoneurotic swelling of the joints, known to this day as "Charcot joints," and advanced neurology in many respects.

With the exception of the Charcot incident, Dr. Munthe makes himself the hero of every story, the prime mover in every incident, the great physician, the wonderful understander of that enigma—woman, the lover and the salvator of all the lower creatures that crawl upon the earth as well as of the humble and most distressed of the human species and the supreme judge of morals, sciences, arts, peoples, and policies, mundane and otherwise. Such delightful egotism as that shown in "The Story of San Michele" has rarely been elsewhere exhibited.

On the other hand the stories are wide thrown and well told. In fact, they are told with a literary flamboyancy and with stark

realism or with a genuine pathos so that they in turn visualize for us, catch our imaginations, horrify us or stir our deepest sympathies. Much of the writing is great writing and the book is written with a pen dipped into wells of historical, cultural, scientific, philosophical, psychological, and human knowledge. Besides this, the man appreciates the beautiful. But it is hard to understand the terrible fascination dead bodies seem to have for him. He embalms them with the pride of an undertaker. He is positively ghoulish in his many descriptions of the dead—take, for instance, his trip to Sweden with the body of the young man and his arrival there with that of the Russian general.

As an example of his style and writing, read his interview with the old drunken doctor in Rome and the doctor's wife and the description of spring at San Michele.

Medically, Dr. Munthe had a good understanding for his day and time. His description of various epidemics is interesting. His appreciation of the value of massage is years ahead of his time. Had other doctors appreciated this, as Weir Mitchell also did, the chiropractor and the osteopath would never have come into their dangerous existence. An eminent physician associated with Weir Mitchell at this period has said that he had never heard of Dr. Mitchell's sending Dr. Munthe patients. Munthe may have been a sympathetic and an intelligent practitioner in spite of his furthering the development of colitis which, by the way, has been followed by neurasthenia, blood pressure disturbance, over-removal of tonsils and teeth and by those sex difficulties which give birth to the over-enthusiastic use of psychoanalysis.

The last chapter of the book is like the book of Revelations in the Bible. One cannot comprehend it or understand why it was appended.

The writer has the habit, just after finishing a book that has moved him to a greater or lesser extent, of writing briefly in the back of the book whatever impression it has immediately made. We shall close by copying what was written in pencil in the book of "The Story of San Michele:"

"He had ideas, such as all of us have—but he stretched his ideas here and he broadened them there and all of them he adapted to his story. He stripped some of these ideas stark and nude, but not many; some he twisted into odd, laughable or whimsical shapes; some he turned wrong side out, but most of them he dressed up quadily, fantastically, cosmetically. Thus truth and fabrication, the delicate and the sordid, the ugly and the lovely, the real and the dramatic are all mixed up and strewn for our delight over these colorful pages by a most interesting egotist who probably possesses a Jehovah complex."

After mature reflection this first impression shall not be corrected.

Beverley R. Tucker.

President's Message

Formerly, our State Society has exercised only two functions, scientific and business. Latterly, to these has been added another, which is educational in character, and is administered through The Department of Clinical Education, the Society's principal educational agency.

More recently, following the original plan outlined for this Department at its initiation in 1928, two other subsidiary educational methods, which will be put into operation gradually, have been arranged for enlarging and enforcing this educational work.

The circle of education, as arranged by the Society, and as now completed, embraces, then, the continuing education of the practitioners in their own communities under the direction of The Department of Clinical Education, the education of special groups under the guidance of the Joint Committee on Prenatal and Postnatal Instruction, and the education of the public through The Joint Committee on Public Health Education, thus contemporaneously teaching medicine to its members and health to the people.

In presenting the resolutions to the Council for the appointment and future work of this latter committee, the President of the Society spoke in part as follows:

"Finally, our State Society, if it would attain the summit of its usefulness, must logically benefit not only its own members, but, also,

correctly educate the people at large. Hitherto, we have not influenced public opinion by participation in cooperative contact with lay organizations, and now, our profession through organized medicine, must seek leadership, and by correctly educating the public in personal and public health measures, earn its cooperation.

"As generous minded as we always have been in our private professional work, we have yet been notably parsimonious and of a frugal mind in our public relations with the people, who are our patients.

"We have not stopped to explain what we are striving to do, and our thoughts and purposes have not been understood, and often have been misinterpreted.

"Dr. Charles B. Reed, of Chicago, says, 'Our scientific discoveries have stored up for us a vast fund of knowledge. This is not for us to keep and conceal for our private uses, but it must be imparted to the public for its welfare and betterment. This promotion and dissemination of medical knowledge is one of our most important factors, and one of the Society's greatest opportunities.'

"The people at large 'will little note, nor long remember' what we do personally, but they cannot forget, if they know something of our work as a profession and its dominant spirit, and understand what we are attempting to do for their continued health and happiness.

"Individualism in the practice of medicine is passing, and a new and larger field of service is opening before us.

"To envision and stabilize the future, to secure the proper understanding of professional aims by the public, to teach health, to abate quackery as far as humanly possible, and to inform correctly the public, there is but one remedy, and that is education, properly conceived and correctly given. Surely, we as the guardian profession of health, will not falter nor fail in such a high purpose and honorable duty, and should now resolve to do our part, individually and collectively, for our profession, because it has done far more for us, than any of us has ever done for it.

"Education of the people plus continued education of the doctors equals State Health, the surest guarantee for the future against socialized medicine, Federal methods, or rank charlatanism. We, as a profession, must face this issue in time—either we can help, or we can unworthily dodge the responsibility.

"It is easy enough to broadcast health knowledge, but it is difficult to arouse an interest that will apply this knowledge to personal use.

"With this new concept of an old subject, it should be an inspiring task for us to direct and enforce this knowledge, for doctors can no longer afford to stand idle on the sidelines of progressive science.

"As a profession, we need a shift in medical thinking in order to meet properly many of the problems in this changing and challenging era. We must no longer simply coddle our fears, but be ready to present factual conclusions.

"We must be prepared."

J. Allison Hodges, M. D.,
President, Medical Society of Virginia.

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

Prenatal and Postnatal Instruction.

The Committee of six representing equally the Medical Society of Virginia, the Medical College of Virginia, and the University of Virginia, the organization of which was proposed to the Department of Clinical Education of the Medical Society by Dr. W. T. Sanger, President of the Medical College of Virginia, and approved by the Department at its meeting on December 11, 1930, held its first meeting January 20, 1931, in the offices of the Medical Society, West Grace Street, Richmond. The following members of the Committee were present: From the Department of Clinical Education, Drs. I. C. Harrison and J. W. Preston; from the Medical College of Virginia, Drs. Manfred Call and L. E. Sutton; from the University of Virginia, Dr. Carroll Flippin. The only absent member was Dr. Royster of the University, who was unable to attend on account of sickness. Others present were Dr. J. A. Hodges, President, and

Miss Edwards, Secretary-Treasurer, of the Medical Society; Dr. Sanger, President, and Dr. Baughman, of the Medical College of Virginia; Dr. Bagby, of the State Department of Health; Mr. Zehmer, Director of the University of Virginia Extension Department, and Mr. Eutsler, Executive Secretary of the Department of Clinical Education.

Before calling the meeting to order, Dr. Hodges read the statistics released last month of an investigation in prenatal and postnatal care which had been conducted on a large scale and over a long period by a maternity association center in the Bronx and a district on the East River of New York. The chief features of the report were as follows: Time of the experiment, six years. Place, a section of New York City. Population, 152,947. Number of cases, 4,728. Mortality rate per 1,000 live births, 2.2. Mortality rate in the control group of mothers, not adequately cared for, 6.2; this figure is nearly three times as large as the rate of mortality in the supervised cases, and is just about the same rate as that for the United States, which in 1928 was 6.5, and in 1929, 7.—the largest in the civilized world. The methods used were not new, merely continuous and adequate prenatal and postnatal care by physicians and nurses; considerable difficulty had been experienced in persuading mothers of foreign births to go to hospitals. Location of maternity cases, both in private homes and hospitals. Implications, infant mortality can be reduced; 30,000 children each year could live and 10,000 mothers could be saved annually if the mothers knew what constitutes adequate care.

In calling the meeting to order Dr. Hodges stated he hoped and believed this would be a significant meeting, instituting effective work in a field where education was badly needed. He considered it an unusual and epochal thing for a medical society and two colleges to agree to work together in a new application of adult education that will surely be watched with interest in other states.

After the selection of Dr. Harrison as temporary chairman, Dr. Sanger of the Medical College of Virginia addressed the meeting, discussing the plans to be carried out by the two state medical schools cooperating with the Department of Clinical Education, and proposed a change of name to "Joint Committee on Post-Graduate Medical Education." He advanced the opinion that the work in prenatal and postnatal instruction will develop to include a much larger service than this one branch. Mr. Zehmer explained that it would be the function of the University of Virginia Extension Department to carry out the orders of the Committee and to act as the executive agency in any way the committee directed.

Dr. L. E. Sutton, Dean of the Medical College of Virginia, was elected permanent chairman, and Mr. Geo. W. Eutsler, of the University of Virginia, permanent secretary. Dr. Flippin in approving the selection of Dr. Sutton as permanent chairman stated that Dr. Sutton had given considerable thought to the work outlined for the committee and he assumed as fundamental that one of the first things they would have to undertake would be to raise money. In his opinion it would be wise for the chairman to be connected with one of the Medical Colleges, since the officers of the State Society changed each year and it is wise to make the responsible office as stable as possible.

There was considerable discussion as to whether this committee had not been appointed to formulate plans for conducting prenatal and postnatal clinics only, since the Department of Clinical Education is conducting clinics in other subjects. It was finally agreed that this committee will confine its work for the present to prenatal and postnatal clinics.

Dr. Bagby, of the State Health Department, stressed the importance of holding individual clinics in doctor's offices in order to reach the men who do not attend society meetings or clinics. He estimated that 90 per cent of the trouble that the Child Health Bureau finds is due to the fact that doctors do not use proper care in the treatment of pregnant women.

Dr. Baughman gave an informal report of his experience in conducting prenatal clinics in Southampton County. His experience based on the attitude of physicians who attend the clinics, and those who heard about the clinics, and did not attend, convinced him of the importance of selecting a clinician of experience and one having no connection with private practice. "The attempt will degenerate into a farce unless a man of real power is picked for the work." He felt that the whole plan offered possibilities for great improvement in the mortality rate of both mothers and infants,

and believed that suitable arrangements could be made.

Dr. Harrison described a prenatal group clinic conducted by Dr. Carter, of the University of Virginia, at Danville, which was highly enjoyed by a number of local physicians.

The name finally agreed on for this committee was "The Joint Committee on Prenatal and Postnatal Instruction."

It was agreed by all present that it would be necessary to employ a full time physician to carry out the plans of this committee. The chairman, Dr. Sutton, was authorized to associate with him such members of the committee as he saw fit in an effort to raise funds to carry forward the work and to submit concrete proposal to all members before placing them before a Board or Foundation. It was the general agreement of the committee that the best estimate at this time of a minimum budget was ten thousand dollars.

The committee adjourned subject to the call of the chairman.

Information

All members of the Medical Society of Virginia are requested to write for any information desired on any subject relative to these Extension Courses in Graduate Medical Education, either to the Executive Secretary, Mr. George W. Eutsler, P. O. Box 707, University, Va., or to the Chairman of the Department of Clinical Education at Danville, Va.

I. C. Harrison, M. D., *Chairman,*
President-Elect, Medical Society of Virginia.

Scheduled Meetings

The following programs will be presented by the Norfolk County Medical Society during the month of April. Visiting physicians are always welcome.

Monday, 13th April, 1931. Section on Surgery.
Atypical Problem in the Injection Treatment of Varicose Veins and Varicose Ulcers—Dr. Eugene Lowenberg.
Discussion opened by Dr. C. Carroll Smith.
Office Treatment of Rectal Conditions—Dr. N. F. Rodman.

Wednesday, 15th April, 1931.
An All-Day Clinic in the Hospitals, conducted by members of the Society. See appended notice.

Thursday, 16th April, 1931. Section on Eye, Ear, Nose and Throat.
Case Reports by various members.

Monday, 20th April, 1931. Section on Medicine.
Tumors of the Spinal Cord, Report of Case—Dr. A. B. Hodges.
Localization of Tumors of the Spinal Cord by Means of the X-Ray—Dr. F. P. Barrow.
(a) An Unusual Gall-Bladder Tumor.
(b) Small Intestine Foreign Body Obstruction—Dr. Lomax Gwathmey.

Monday, 27th April, 1931. Section on Obstetrics:
Management of the Occipito-Posterior Position—Dr. Chas. W. Doughtie.
Uterine Tumors Complicating Pregnancy and Labor—Dr. Thos. M. Vorbrinck.
Anatomy of the Uterine Pelvic Support—Dr. John W. Winston.

The accompanying announcement relative to the All-Day Clinic has been given out by Dr. M. S. Fitchett, Chairman of Committee of Arrangements:

All-Day Clinic of the Norfolk County Medical Society,
Wednesday, 15th April, 1931

In collaboration with the Department of Clinical Education of the Medical Society of Virginia, the Norfolk County Medical Society will hold an all-day Clinic in Norfolk on Wednesday, 15th April, 1931.

While at time of going to press the itemized program is not wholly available, Medical and Surgical cases of special interest will be presented at both sessions, so that the occasion will be of general interest to practitioners.

The morning session at 10:00 A. M., will be held at St. Vincent's Hospital. After the session luncheon will be served by the hospital.

The afternoon session will be held at the Protestant Hospital at 2:15 P. M.

Those who attended the corresponding Clinic of last year will need no assurance of the benefit to be derived from attendance.

A cordial invitation is extended to all physicians of the State and territory adjacent to Norfolk to be present and take part in the proceedings.

Detailed programs will be mailed to physicians and Societies in the surrounding community.

Don't forget the date, 15th April, and be sure to come.

Following is a tentative program of the clinical session of the Warwick County Medical Society, which will be held jointly by the two hospitals at Newport News, Va., Tuesday, April 7, 1931:

Morning Session—Riverside Hospital
Time—9:00 A. M.

"Carcinoma of the Prostate"—Dr. W. O. Poindexter.
"Orthopedic Clinics"—Dr. H G. Longaker and Dr. D. M. Faulkner (substituting for Dr. W. T. Graham, of Richmond).
"The X-ray Diagnosis of Non-tuberculous Chest Conditions"—Dr. F. A. Sinclair and Dr. T. M. Wood.
"Spinal Anaesthesia With Special Reference to Its Use in Surgery and Obstetrics"—Dr. W. R. Payne.
"The Treatment of Uncomplicated Cases of Diabetes Mellitus"—Dr. L. E. Stubbs.
"The Role of Allergic Disease in Otolaryngology"—Dr. G. G. Hankins.

Alternates

"Radiology"—Dr. J. H. Mabry.
"Diagnosis of Right, Upper, Abdominal Conditions"—Dr. O. T. Amory.

Complimentary Luncheon—12:30 P. M., by the Warwick County Medical Society

AFTERNOON SESSION—ELIZABETH BUXTON HOSPITAL
Time—2:00 P. M.

"Cancer of the Breast"—Dr. Joseph T. Buxton.
"Management of Heart Disease by the General Practitioner"—Dr. J. C. Flippin, University, Virginia.
"Blindness Due to Foci in the Mouth and Nose"—Dr. C. P. Jones.
"Treatment of Endocervicitis"—Dr. J. E. Marable.
"X-ray Studies of the Genito-Urinary Tract"—Dr. R. A. Davis.
"Ureteral Calculi"—Dr. A. A. Creecy.
"The Injection Treatment of Hemorrhoids"—Dr. J. C. Cutler.
"Diabetic Coma and Acidosis"—Dr. L. E. Stubbs.
"Blood Dyscrasia"—Dr. H. W. Potter.
"The Treatment of Appendicitis with Perforation"—Dr. J. W. Sayre.
"Clinical Allergy"—Dr. E L. Alexander.

All discussions will be limited to fifteen minutes except Drs. D. M. Faulkner and J. C. Flippin, who will be given the time necessary to finish their subjects.

THE LYNCHBURG AND CAMPBELL COUNTY MEDICAL SOCIETY will hold a clinical meeting, April 23rd, starting at 2 o'clock. There will be six thirty-minute clinics with demonstrations of patients and conditions, followed by supper at 6:30 P. M. After supper, there will be four fifteen-minute papers, the meeting closing promptly at 8:30.

The following is a list of the clinics to be given:
2:00 P. M.—Tuberculosis, by Dr. T N. Davis.
2:30 P. M.—Gonorrhea and Syphilis (Its Recognition and Treatment), by Dr. S. H. Rosenthal.
3:00 P. M.—Obstetrics, by Dr. F. O. Plunkett.
3:30 P. M.—Thyroid and Ovarian Disturbances, by Dr D. P. Scott.
4:00 P. M.—Diabetes, by Dr. F. M. Perrow.
4:30 P. M.—Cardiac Diseases, by Dr. Ernest Scott.

Any spare time between the clinics and the supper will be used for a round table discussion.

The papers to be given are:
Infantile Paralysis (Its Early Recognition and Treatment), by Dr. B. H. Kyle.
Infections, by Dr. E. Barksdale.
Mental Diseases (From the Standpoint of the General Practitioner), by Dr. J. H. Bell.
Middle Ear Infections and Pyelitis in Children, by Dr. Sam Wilson.

All clinics will be held at the City Health Office Clinic, in the Municipal Building, at Tenth and Church Streets.

Invitation is extended all members of the Medical Society of Virginia to attend these clinics.

THE POST-GRADUATE MEDICAL SOCIETY will hold its next regular meeting in Waverly, on Tuesday, April 14th, at 2 P. M.

At this time there will be a symposium on Obstetrics as follows:
"The Importance of Pre-Natal and Post-Natal Care"—Greer Baughman, M. D.
"The Management of a Normal Labor in the Home"—J. L. Hamner, M. D.
"The Management of Pregnancy When Complicating Tuberculosis"—John A. Proffitt, M. D.
"The Diagnosis and Management of Abnormal Presentations"—J. B. Jones, M D.
"Eclampsia"—Harry Hudnall Ware, Jr., M. D.
"Uterine Hemorrhage in Obstetrics"—B. J. Atkinson, M. D.
"X-Ray in the Diagnosis of Pregnancy"—Wright Clarkson, M. D.

Tuesday, May 19th, Dr. Joseph Colt Bloodgood, of Johns Hopkins University, assisted by various outstanding surgeons, pathologists and roentgenologists of Virginia, will give an all-day demonstration before the POST-GRADUATE MEDICAL SOCIETY on the various aspects of cancer. This meeting will be held in Petersburg and will cover the ground of what every physician, as well as pathologist and radiologist, should know about cancer. There will be four large daylight screens and four lanterns going continuously during the entire demonstration.

THE CLINCH VALLEY MEDICAL SOCIETY, of which Dr. N. W. Stallard, Dungannon, is president, and Dr. C. B. Bowyer, Stonega, secretary, is to hold a clinical meeting at Lebanon, Va., April 23 and 24.

THE SOUTH PIEDMONT MEDICAL SOCIETY will meet in Lynchburg, Va., April 23rd. Dr. George A. Stover, South Boston, secretary, will be glad to give information about this meeting.

THE UNIVERSITY OF VIRGINIA will hold its regular spring clinics in the early part of May. Definite plans had not been made at the time of going to press, but information may be obtained in regard to these from Dr. L. T. Royster, University, Va.

State Society Appeals

Public Relations Committee.

It is becoming increasingly apparent that the government, both Federal and State, is gradually assuming certain prerogatives, responsibilities, and functions, which have been vested in the medical profession for many years. The federalization of medicine has already, either partially or completely, become effective in twenty-eight countries of the world.

Dr. Southgate Leigh, in his report of the proceedings of the A. M. A. at the Norfolk meeting of the Medical Society of Virginia, October 21-23, 1930, urged the immediate appointment of a Public Relations Committee to investigate this problem and make recommendations, this action being advocated by the A. M. A., at the Detroit meeting. The House of Delegates voted to adopt the recommenda-

tions of Dr. Leigh, and the following committee was appointed by the President:

G. F. Simpson, M. D., *Chairman*,
Southgate Leigh, M. D.,
A. F. Robertson, Jr., M. D.,
Wade C. Payne, M. D.
J. Bolling Jones, M. D.

The committee met in Richmond, January 15th, for the purpose of organizing and formulating a plan of action. At the suggestion of the chairman, Dr. W. O. Bailey, of Leesburg, Va., was made secretary to the committee.

The committee agreed that urgent necessity does exist to take immediate cognizance of Federal and State encroachments, and to combat them. It undertook to establish a plan of procedure to meet this vital contingency and to consider (a) How, (b) Where, and (c) By whom this action should be taken; and, further, to whom facts which have been and will be adduced should be communicated.

In view of the above, the Committee urges the Presidents of all County Societies, and other Medical Societies in the State, to confer with the Councilors in their districts, for the purpose of assembling all the practitioners in their districts at some convenient place, at which time some member of the Public Relations Committee will meet with them and present this important matter. Any further information desired will be given with pleasure by

G. F. Simpson, M. D., *Chairman*.
Purcellville, Va.

The State T. B. Campaign.

The month of April, this year, is set for the "teen" Tuberculosis campaign. All along the line, medical, health, social, civic, religious, labor, and fraternal organizations throughout the country will be formed to fight this foe of youth.

Our profession is invited and urged by the tuberculosis associations of the United States to do our part, when called upon this month, and this invitation, we believe, our members will consider only another opportunity for willing service, for no one realizes more truly than the physicians, the necessity and value of this educational work, especially for adolescents. This opportunity will also give to youth in this battle, the advantage of the offensive, "the courage of arms instead of armor," and thus interpret to him and for himself, his most distinctive and privileged birthright.

Tuberculosis is youth's mortal enemy, and the pity is that its own inherent virility notes aught but health, or knowing, little heeds any danger. Consequently, it should be our pleasure, as our duty, to instruct and warn them that it is during the high-school years that the health and destiny of many are determined. We would not put unwarranted fear into their minds, but rather put them "on suspicion," and if need be, teach them how to safeguard themselves and others, for tuberculosis "is still the chief cause of death in the first decade of maturity."

In the study of no other single disease, has the medical profession learned so much, and with its time-honored practice, it stands ready and anxious to pass on its slowly acquired knowledge for the benefit of others.

The struggle to abate the ravages of tuberculosis has taught the profession many valuable lessons, and proved absolutely many things: if no others, the fact that it is contagious, and not hereditary; that infection takes place largely through close contacts, and especially in the "teen" years; that it can be prevented and cured, the present mortality rate being less than half what it was twenty years ago; and that when once early diagnosed, its curative agencies are simple, and easily within reach of all,—these facts in themselves are a treasure-house for the future.

Such proved medical truths should be disseminated widely, and at all times, so that those "who run may read," and with this knowledge made personal, and lived personally, a new courage and a new faith would be born in the souls of men that would eventually bring unrealized assets of health and happiness.

If it should happen that we, personally, were limited to but one lesson in one sentence out of all medical learning, to impart to parents and the public, we should choose "*separate young adults and children from positive sputum*," and from the collective experience of many years, we believe that this one sentence of medical advice, followed closely and conscientiously, would bring a greater reward to individuals and to the race than any other single sentence based on medical knowledge.

If the members desire any special information as to this Early Diagnosis Campaign, please write the Executive Secretary, Virginia Tuberculosis Association, Atlantic Life Building, Richmond, Va.

J. Allison Hodges,
President.

News Notes

Virginia Tuberculosis Association.

According to the report of the Executive Secretary of the Association at its annual meeting held in Danville, February 27th, during 1930, $26,621.06 was spent for sanatorium board for tuberculous patients according to the reports of the county and city branches of the Virginia Tuberculosis Association, $4,482.00 for the care of those ill at home and $12,681.10 for child health work. Other expenditures reported for nurses' salaries, clinics, etc., amounted to $36,886.98, making a total of $80,671.14.

It was also stated that in the course of the year's work, 291 visits were made to county organizations of the Virginia Tuberculosis Association and fifty-two to the cities. An Early Diagnosis Campaign was put on in seventeen counties and the cities of Richmond, Roanoke, and Portsmouth, Field Workers of the Virginia Tuberculosis Association assisting in all except the one in Richmond, which was directed by the Richmond Tuberculosis Association.

Officers re-elected were: Dr. Dean B. Cole, Richmond, President; Mr. George W. Call, Richmond, Treasurer; Dr. Roy K. Flannagan, Assistant Commissioner of Health, Secretary of the Board; Mrs. T. Allen Kirk, Roanoke, Second Vice-President; Dr. William P. Caton, of Fairfax County, was elected First Vice-President.

News From University of Virginia, Department of Medicine.

Dr. D. Lesesne Smith, Pediatrician of Spartansburg, S. C., and Director of the Southern Pediatric Seminar at Saluda, N. C., visited our Medical School on February 15th.

On February 17th, Dr. Edwin P. Lehman, Professor of Surgery and Gynecology, spoke before the Tri-State Medical Society, meeting in Richmond. The subject of his address was Some Factors in the Pathological Physiology of Burns.

On February 24th, Dr. James Edwin Wood, Associate Professor of Internal Medicine, addressed the Richmond Academy of Medicine on the Treatment of Adams-Stokes Syndrome with Ephedrine. On March 2nd, he addressed the medical meeting at the Southside Community Hospital in Farmville on Cardiac Arythmias. On March 16th, he spoke before the Roanoke Academy of Medicine and on March 18th, before the Southwestern Virginia Medical Society meeting in Wytheville.

On March 18th, Dr. Lawrence T. Royster, Professor of Pediatrics, spoke before the Southwestern Virginia Medical Society at Wytheville on the subject of Anhydremia.

At the meeting of the University of Virginia Medical Society on March 2nd, Dr. H. E. Jordan presented a paper on The Blood and Blood Forming Tissues of Lower Vertebrates, and Drs. Archer and Barker discussed Non-Ulcerative Diseases of the Pylorus and Duodenum.

At the meeting on March 16th, the following program was presented: Some Observations on Spontaneous Subarachnoid Hemorrhage by Dr. Staige Davis Blackford; Gastric Analysis in Pellagra by Drs. Mulholland and King; and the Glial Structure of a Few Brain Tumors by Dr. David C. Wilson.

May Day—Child Health Day 1931.

The May Day—Child Health Day Committee of the Conference of State and Provincial Health Authorities of North America met at the headquarters of the American Child Health Association, in New York City, December 19th and formulated a May-National Child Health Day Program for 1931. The Committee adopted as the keynote of this program "Community Responsibility and Cooperation for Child Health and Protection."

Starting as an out-door play day, May Day has become a health day in the most inclusive sense, with states, cities, and villages beginning and ending on that date their year-round plan for the children of their community. Probably on that day more "health audits" are performed throughout the country than on any other single date.

According to the White House Conference on Child Health and Protection, the maternal

death rate is higher in this country than in twenty-five of the largest nations of the world. In 1929, according to figures given in the Medical Section of this Conference, 15,000 homes were left motherless. There were in that year 85,600 stillbirths, and 80,000 infants came into the world so weak that their struggle for life lasted less than a month. The crippled, mentally defective and otherwise handicapped children in the United States number from three to five million. Any radical reduction in the causes of material mortality will cut to a marked degree the nation's bills for crime and for child welfare, estimated at $16,000,000,000 and $5,000,000,000, respectively.

For further information as to May Day—National Child Health Day, write the American Child Health Association, 370 Seventh Ave., New York, N. Y.

2,500,000 Drought Victims Well Fed by Red Cross.

Nearly 2,500,000 persons in twenty-two states came under the care of the American Red Cross as a result of drought. Relief operations were the most extensive in fifty years of aiding victims in more than 1,000 disasters. Only 340 professional workers were employed on the huge task, the rest being volunteers. Local Chapters taxed their resources to the utmost before asking for funds from the National Headquarters.

As early as last September, the Red Cross began distributing to more than 58,000 families seed for pastures and to more than 27,000 families seed for kitchen gardens, in anticipation of the emergency. The expenditure for this purpose amounted to $326,800. Green vegetables were thus made available up to the first of January, and stock was kept alive for several months. A second garden program got under way in February, and 537,000 packages of seed were distributed. Feeding provided balanced and adequate rations. Red Cross nutritionists, together with Department of Agriculture experts, made it effective in preventing malnutrition and setting up a resistance to disease Hot lunches were served in many schools. County health officers and private physicians commended the adequacy of rations procured on orders issued by Red Cross Chapters, which were filled at local stores. More than 500 carloads of foodstuffs were contributed. These were hauled free by the railroads, as their contribution to the cause.

States involved were: Alabama, Arkansas, Georgia, Illiniois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Mississippi, Missouri, Montana, North Carolina, New Mexico, North Dakota, Ohio, Oklahoma, Pennsylvania, Tennessee, Texas, Virginia, and West Virginia.

Married.

Dr. Louis Perlin, Richmond, Va., and Miss Lillian Levin, Baltimore, Md., February 15th. Dr. Perlin is a graduate of the Medical College of Virginia in the class of 1923.

Dr. Hornsby Struck by Auto.

Dr. John A. Hornsby, superintendent of the University of Virginia Hospital, suffered a fractured pelvis when struck by an automobile, while in Washington, D. C., the last of February. After emergency treatment there, he was taken to University Hospital.

Call Issued for A. M. A. Meeting.

The American Medical Association has issued official call for its eighty-second annual session in Philadelphia, June 8th to 12th, inclusive. The House of Delegates will convene on Monday, the 8th, the Scientific Assembly will open with the general meeting on the evening of the 9th, and the various sections of the Scientific Assembly will start on Wednesday, the 10th, at 9 A. M. Dr. William Gerry Morgan, Washington, D. C., an honorary member of the Medical Society of Virginia, is this year's president.

Stuart McGuire Lecture Given by Dr. Mitchell.

Dr. S. A. Mitchell, director of the Leander McCormick Observatory, University of Virginia, gave the second Stuart McGuire Lecture at the Medical College of Virginia, Richmond, on Wednesday, March 25, 1931. His subject was "Eclipse Hunting in the South Seas." The Stuart McGuire Lecture was established a year ago in recognition of the services of Dr. Stuart McGuire to the college, to medical education, and to surgery.

Dr. A. T. Sheffield,

Formerly of Suffolk, Va., after a sickness lasting for several months, has located at Bluemont, Va., for the practice of his profession.

Dr. G. B. Setzler,

Recently of Norton, Va., has located at Pennington Gap, Va., where he became chief surgeon of the new Lee General Hospital in that place.

Dr. Harvey B. Stone,

Baltimore, by invitation addressed the Richmond Academy of Medicine at its meeting on

March 24th, his subject being "What Should be the Mortality in Appendicitis?"

Dr. Nickels Loses Home.

Dr. and Mrs. S. B. Nickels, Clinchport, Va., had the misfortune to lose their handsome eleven-room home by fire on the afternoon of January 30th. The family had gone to Gate City for the afternoon, and the fire occurred during their absence, causing a loss estimated at about $15,000, in spite of the fact that neighbors helped all possible to save some of the furniture and the Doctor's office equipment. Dr. Nickels and family are staying in Big Stone Gap until arrangements can be made for another home at Clinchport. To add to their troubles, since the fire, Sam, Jr., has been sick with pneumonia.

A Cooperative Clinic Tour of Europe.

A four page insert in this issue gives special features and also the itinerary of the cooperative clinic tour of Europe. Those who take this tour will sail from Montreal on June 12th, immediately following the close of the annual meeting of the American Medical Association at Philadelphia, and are due to arrive back at Montreal on August 8th. This fifty-eight day tour will cost only $895.00 for each person. This includes minimum rate cabin class (the best class on the ship) in each direction, strictly A-grade hotels throughout Europe, all rail transportation, transfers to and from hotels, railroad stations, steamship docks, etc., handling of a stated amount of baggage, and all sightseeing arrangements, entrance fees and clinic programs.

For further information and descriptive booklet, write the Virginia Medical Monthly, 104½ W. Grace St., Richmond, Va.

The Mid-Tidewater Medical Society

Is to hold its regular quarterly meeting at Saluda, Va., on April 28th. In the last issue of the Monthly, it was stated that the next meeting would be on the fourth Tuesday in July, which was an error, as this Society meets quarterly. Dr. William Gwathmey, Ruark, is president, and Dr. Malcolm H. Harris, West Point, secretary.

The American Public Health Association

Announces that its sixtieth annual meeting will be held in Montreal, Quebec, September 14th-17th. The Windsor Hotel will be headquarters. It is stated that this announcement is intended as an invitation for our members to attend that meeting. For information about this meeting, address the American Public Health Association, 450 Seventh Avenue, New York, N. Y.

Dr. Emily Gardner,

Formerly connected with the Virginia State Bureau of Child Welfare, left for England early in March with a view to doing post-graduate work in pediatrics there and on the continent. She plans to return in the Fall. Dr. Gardner recently returned to Virginia after sometime spent in post-graduate study in New York.

Dr. D. C. Smith,

Of the University of Virginia, School of Medicine, addressed the Lynchburg and Campbell County Medical Society on March 2nd, his subject being "The Differentiation of Syphilis From Some Common Skin Diseases." His talk was illustrated with lantern slides.

The Richmond (Va.) Pediatric Society,

At its meeting on March the 5th, elected Dr. Henry Stern, president; Dr. John S. Weitzel, vice-president; and Dr. W. E. Chapin, secretary-treasurer. At this meeting, Dr. St. Geo. T. Grinnan presented a paper on "The Relation of Health to the Variability of the Ph. of Blood Plasma."

Report of Mt. Regis Fire Exaggerated.

We are advised by Drs. Watson and Flannagan, physicians in charge of Mt. Regis Sanatorium, Salem, Va., that the reports of the fire at that institution a month ago were much exaggerated in the newspapers, and that they were able to resume work in the building in which the fire occurred as soon as the smoke cleared away. In fact, patients were X-rayed that very morning in the office just over the place where the fire occurred.

Dr. Charles R. Robins, Jr.,

Richmond, who graduated from the Medical College of Virginia in the class of '29, returned home the middle of March, after studying at the University of Prague, in Vienna, Berlin, Paris, and Budapest. He has received an appointment to the fellowship course at Mayo Clinic, Rochester, Minn.

Heads Base Hospital No. 45.

Mrs. Stuart McGuire, Richmond, Va., was elected commander of Base Hospital No. 45, familiarly known as the McGuire Unit, at its eleventh annual reunion dinner in Richmond, February the 28th.

Dr. David B. Stuart,

Dublin, Va., is recuperating at home, after undergoing an operation for appendicitis re-

cently at Lewis-Gale Hospital, Roanoke. He hopes to resume some of his practice in April.

Dr. W. H. Walcott,

Formerly of Clinchburg, Va., is now practicing at East Falls Church, Va.

Dr. R. H. Meade, Jr.,

Formerly connected with the School of Medicine of the University of Virginia, but who moved to Philadelphia about the close of the past year, has been appointed an Associate in Surgery in the University of Pennsylvania.

Dr. Robert F. Gillespie,

Formerly of Bastian, Va., has accepted a position with the Pocahontas Fuel Company, and is now located at Switchback, W. Va.

New Mother's Day.

Women's clubs throughout the country are to join in an appeal on Mother's Day, May 10th, to obtain adequate maternity care for mothers in the United States, according to a statement received from the Maternity Center Association. This plan has the endorsement of the department of public welfare of the General Federation of Women's Clubs.

It is suggested that everywhere possible special programs and other activities be promoted by clubs. Any chairman desiring details may get them from the Maternity Center Association, 576 Madison Avenue, New York City.

The association has made public a report of eight years' work with nearly 5,000 mothers, which shows that among those under its care the death rate was reduced to one-third that prevailing among mothers in the same section not receiving such care. The report was rendered by Louis I. Dublin, statistician of the Metropolitan Life Insurance Company after a study of the records of cases. In commenting, he said: "This result is indicative of the saving of lives that might be accomplished were every mother to receive the benefit of a specialized maternity service."

Pan American Medical Association.

The Third Congress of the Pan American Medical Association will be held in Mexico City, Mexico, July 26 to 31, 1931. This medical conference meets for the purpose of maintaining and promoting a more intimate understanding between the medical men of the New World, and with the efforts of many prominent North and Latin American physicians, a great success has been accomplished in the past meetings.

The Organization Committee of the Congress extends a cordial invitation to those who are interested in medical interchange among English, Spanish, French, and Portuguese speaking doctors for this meeting.

Programs and other information may be obtained from Dr. Jose E. Lopez, Executive Secretary of the Pan American Medical Association, Secretaria de Sanidad y Beneficencia, Habana, Cuba.

Radium Number.

The March, 1931, issue of *The Radiological Review* (Chicago) is devoted entirely to Radium, and is the fourth annual "Radium Number" of this publication.

All the articles are written exclusively for this issue, and collectively, they can be considered to present the present status of Radium Therapy as practiced in this country. The presentations are from among the leading radium therapists of America.

New Pamphlets on Tuberculosis for Doctors.

A copy of the 1931 edition of Diagnostic Standards will be sent *gratis* to any physician in Virginia upon application to the Virginia Tuberculosis Association, 511 Atlantic Life Building, Richmond, Va. This forty-seven page booklet is prepared by the committee appointed by the National Tuberculosis Association, which numbers among its membership the leading men in America in the field of tuberculosis.

The Virginia Tuberculosis Association will also send upon receipt of 15c, to cover actual cost, a copy of "The Childhood Type of Tuberculosis," a thirty-two page booklet by Chadwick, and McPhedran, Aronson and Opie, illustrated by X-ray plates reproduced by the aquatone process, and other illustrations, of the technique of the tuberculin test, etc.

Free! Mental Hygiene Journals.

A limited number of back issues of *Mental Hygiene*, quarterly journal of The National Committee for Mental Hygiene, beginning with Volume I, 1917, are available, without charge, to libraries, medical schools, hospitals, clinics, and other eleemosynary and educational institutions. The only charge will be for packing and shipping.

As this offer will stand for but a few weeks, applications should be made at once to H. Edmund Bullis, Executive Officer, The National Committee for Mental Hygiene, 370 Seventh Avenue, New York City. Orders should be sent for as complete sets as possible.

Location Wanted.

A doctor with no encumbrance wishes a location, preferably in Tidewater Virginia. Address No. 287, care VIRGINIA MEDICAL MONTHLY. (*Adv.*)

Obituary Record

Dr. Job Gustave Holland,

Well known physician of Holland, Va., died February 14th. He was sixty-nine years of age and a graduate of the Medical College of Virginia in the class of '84. Dr. Holland had been a member of the Medical Society of Virginia for forty-one years. He was a member of the town council of Holland, at the time of his death. His wife and three sons survive him. One son is Dr. Gilmer G. Holland, also of Holland, Va.

Dr. William Carey Barker,

Prominent physician of Buchanan, Va., died February 25. He was born in Goochland County, Va., in 1857, and graduated from the Medical College of Virginia in 1884. Dr. Barker was assistant physician at the Central State Hospital, Petersburg, Va., from 1887 to 1897, after which he moved to Buchanan, Va. He was a Mason and had been a member of the Medical Society of Virginia for forty-six years. His second wife and three children survive him.

Dr. John Edward Lincoln,

Well known physician of Lacey Spring, Va., died March 15th, at the age of seventy-five. He graduated in medicine from the Bellevue Medical College, New York, in 1877, and after practicing for a few years in West Virginia located at his old home near Lacey Spring. Three years ago, Dr. Lincoln observed his fiftieth anniversary of continuous medical practice as a country physician. He was president of the Rockingham Board of Health and had been a member of the Medical Society of Virginia for the past twenty-six years. His wife and one son, Dr. Asa L. Lincoln, of New York, survive him.

Dr. Moreland Russell Irby,

Richmond, Va., died suddenly from apoplexy, on March 16th, in the corridor of the Supreme Court Law Library, this city, to which place he had gone for a reference book. Dr. Irby, who was a native of Hanover County, Virginia, was fifty-four years of age. As a young man, he went to New Jersey and while working in a drug store studied medicine at Jefferson Medical College, Philadelphia, from which he graduated in 1908. Later he practiced for a time in North Dakota. After service in the World War as captain in the medical corps, he located in Richmond, where he had since made his home. Dr. Irby had been a member of the Medical Society of Virginia for several years. His wife and a son survive him.

Dr. Calvin W. Canan,

Orkney Springs, Va., was killed when his car overturned near Harrisonburg, on February 28th. It is believed he suffered a heart attack, causing him to lose control of his car. Dr. Canan graduated from the Baltimore Medical College in 1891. He had been practicing medicine at Orkney Springs for the past fifty years. Dr. Canan was formerly a member of the Medical Society of Virginia. His wife and one daughter survive him.

Dr. William Hamilton Dulaney

Died early in March, at his home in Lynchburg, Va. He was a native of Baltimore and was ninety-four years of age. Dr. Dulaney graduated from the University of Maryland School of Medicine in 1859. He was an army surgeon during the War Between the States and had formerly served as a member of the Lynchburg City Council. His wife and stepson survive him.

Dr. Sampson Busby Allen,

Charlottesville, Va., died February 4th, of cerebral arteriosclerosis. He was seventy-seven years of age and graduated from the Bellevue Hospital Medical College, New York, in 1879.

Dr. William M. Carter,

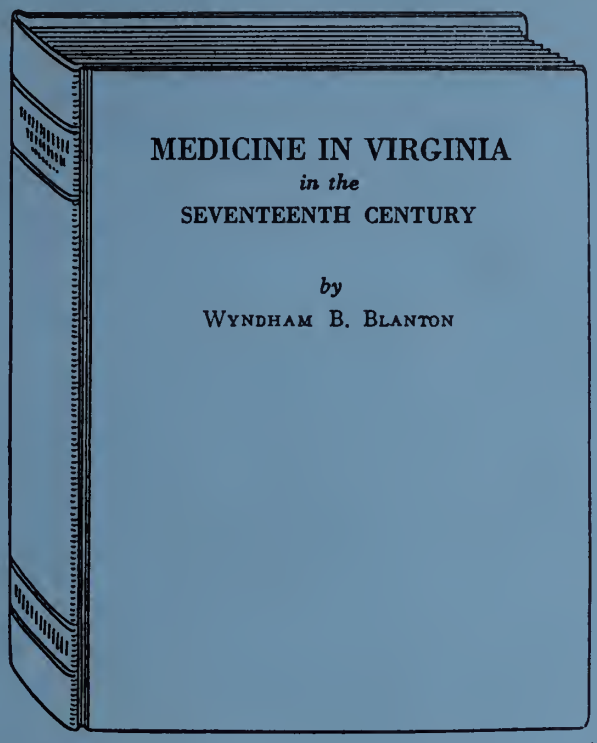
Keokee, Va., died December 8, 1930, of cirrhosis of the liver. He was sixty-six years of age.

Dr. Jefferson Cawood Newman

Died at National Soldiers Home, Va., February 8th, of heart disease. He was sixty-nine years of age and graduated from the Tennessee Medical College, Knoxville, in 1892. Dr. Newman was a member of the staff of the National Soldiers Home.

Dr. Edwin Brown Claybrook

Died at his home in Cumberland, Md., February 28th, following a brief illness. He was born in Westmoreland County, Va., in 1871, and graduated from the former University College of Medicine, Richmond, Va., in 1898. Dr. Claybrook is survived by his wife, who was formerly Miss Harriet Lightfoot, of Richmond.



Not the Book-of-the-Month— but the Book-of-the-Century

This volume has been accorded a universally favorable reception by those of the medical profession in Virginia and the nation who have received the first lot distributed.

A few of the comments received on this volume, prepared by the Historical Committee of the Medical Society of Virginia, follow:

DR. BLANTON HAS made a notable contribution that will live as long as medicine lives in Virginia, and the William Byrd Press has done as good a piece of work as can be done in this Country.—BEVERLEY R. TUCKER, M. D.

I HAVE GONE over the volume and wish to express my appreciation and congratulations to you for the excellent way in which it has been gotten out. The paper, the binding and the type of printing are certainly characteristic of careful and excellent work.—F. C. RINKER, M. D.

I HAVE READ this interesting and informing volume with the greatest pleasure. It is a treasure-house of most valuable and authentic history . . . we can now see the extent of the development of medicine, and feel cause for congratulation in the wonderful advances, not only in our profession, but along all collateral lines of living.—J. ALLISON HODGES, M. D.

THE SUBJECT MATTER is well written and is attractive. The bibliography appears abundant, and the authorities for the statements made are fully given. It is beautifully gotten up and would be a credit to any publishing house.—J. SHELTON HORSLEY, M. D.

MY HEARTY CONGRATULATIONS to the Historical Committee of the Medical Society and above all to Dr. Blanton for the work that they have done in gathering this material and then presenting it in such fine form. Let me compliment you very sincerely on the get-up of the book. It could not be finer.—JAMES J. WALSH, M. D., *Medical Historian,* New York.

THIS IS A BOOK of sound scholarship, and, in addition to that, it is interesting to read. It adds vastly to our knowledge of medicine in Virginia and also of life in Virginia in the Seventeenth Century.—DR. HENRY R. MCILWAINE, *State Librarian.*

This handsome volume contains 356 pages and forty full-page illustrations. It will always be the authoritative historical work on medicine in Virginia in the seventeenth century. Price $6.00.

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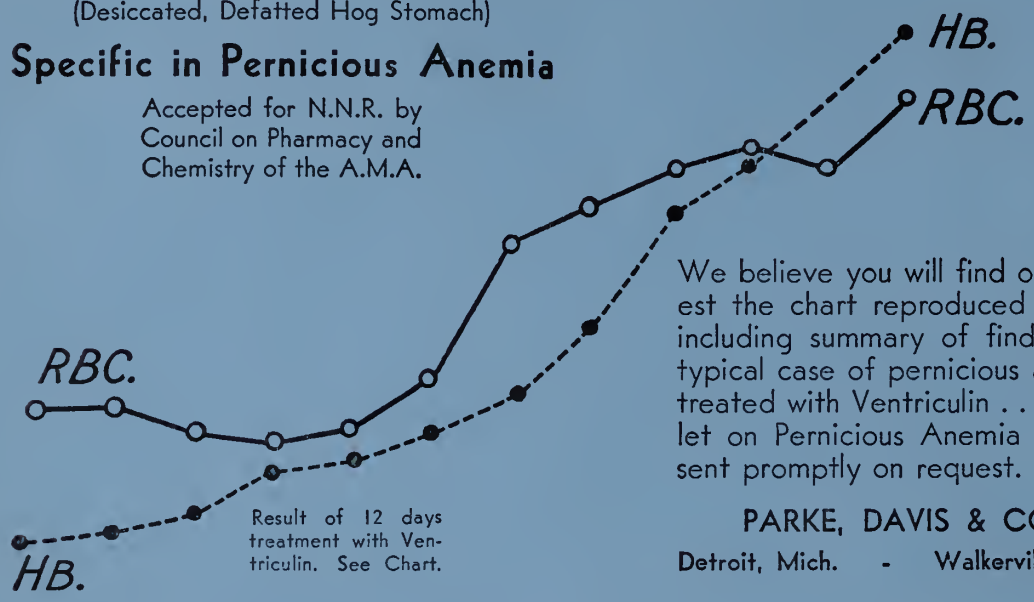

Result of 12 days treatment with Ventriculin. See Chart.

We believe you will find of interest the chart reproduced below, including summary of findings in typical case of pernicious anemia treated with Ventriculin . . . Booklet on Pernicious Anemia will be sent promptly on request.

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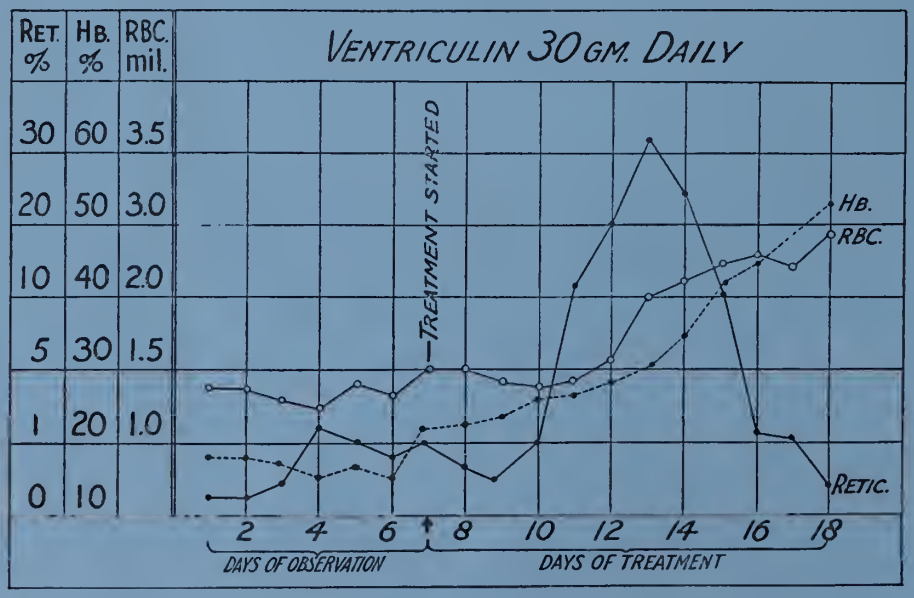

DIAGNOSIS. Pernicious anemia.

INITIAL BLOOD COUNT: Red blood cells 1.5 million per cu. mm.; Hemoglobin (Newcomer) 21 per cent; Reticulocytes 1.0 per cent.

TREATMENT. Ventriculin 30 Gm. daily.

PHASE OF REMISSION. On sixth day of treatment: RBC 2.0 million; Hemoglobin (Newcomer) 30 per cent; Reticulocytes 32.0 per cent (calculated rise for 1.5 million red blood cells at beginning of treatment = 22.3 per cent, exceeding expected rise by 9.7 per cent).

PROGRESS REPORT. On the twelfth day after Ventriculin was begun the following blood count was recorded: RBC 2.9 million; Hemoglobin 52 per cent; Reticulocytes 0.4 per cent. (Expected weekly increase = 500,000 red blood cells per cu. mm. Actual increase in this patient = 700,000 red blood cells per cu. mm.).

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SOME CUTANEOUS MANIFESTATIONS OF SYPHILIS.*

By DUDLEY C. SMITH, M. D., Charlottesville, Va.
University of Virginia.

It makes a systematic arrangement to begin a discussion of syphilis with the external manifestations. It should be emphasized though that the most important pathological changes and reactions caused by this disease are internal. Syphilis has been compared with the ice-berg which moves nine-tenths below the surface and only one-tenth above. The dangerous portion is that underneath the surface. The Treponema pallida kill and cripple usually by the slow process of changing parenchyma into scars and degenerative tissue. This fact is related both to the clinical changes which occur in the disease and to its proper treatment. Nevertheless, some of the most important diagnostic landmarks of syphilis are found on the surface of the body.

The earliest external evidence of syphilis, in most cases, is the chancre. This occurs at the site of inoculation of the Treponema pallida following an incubation period averaging about four weeks. The organisms, though, have not limited their activity to the site of inoculation during this period. They spread through the lymphatics and blood vessels within a few hours after penetrating the skin or mucous membrane. In other words, by the time the chancre has developed, the patient has had a systemic infection for some time.

Morphologically the chancre is variable; there may be a slight insignificant erosion, large edematous, indurated, multiple ulcerations and all intermediate types of lesions. Formerly much attention was placed on the clinical characteristics of a genital lesion in differentiating a syphilitic from a non-syphilitic infection. As shown by the illustrations this is a very unreliable method of diagnosis. The only safe way to determine whether or not a lesion is a chancre is by laboratory methods. The dark-field microscope is the best method for demonstrating the organisms in serum either from the lesion or the adjacent lymph nodes. It is desirable to make a diagnosis before the complement fixation or precipitation tests become positive because at this stage a permanent cure is easiest. No lesion suspicious of being a chancre should be treated with antisyphilitic drugs before the diagnosis is confirmed by a positive laboratory report. Repeated negative examinations without the use of local antiseptics are necessary to eliminate syphilis. Also every patient with a genital or suspicious extragenital lesion in whom the dark-field examinations are negative should have a serologic follow-up, that is a Wassermann and Kahn test should be repeated at weekly intervals for six weeks, then monthly for six months before the patient is discharged with the assurance that he does not have syphilis.

Usually there is no or slight symptomatology of a generalized infection with the Treponema pallida until after the development of the chancre. Then there begin to appear evidences of involvement in other parts of the body, as meninges, bones, sensory organs, gastro-intestinal tract, blood-forming tissues, cardiovascular system, etc. The manifestations are variable and here as in the other stages of the disease it can be truthfully called "The Great Imitator." In this secondary stage again the laboratory is the only reliable dependence for diagnosis. The eruption and other lesions can easily be confused with non-syphilitic conditions. The Wassermann and precipitation reactions, moreover, approach perfection in their accuracy in that a positive is obtained in almost 100 per cent of cases of secondary syphilis.

As the patient's immunity to this infection increases the outward manifestations tend to disappear. The asymptomatic and tertiary periods are approached. The parasites become fewer in number but the tissues have been sensitized to them and a few can do major harm. This immunity or resistance is not constant. Following a relaxation in the body's defense,

*Read as part of a symposium on Syphilis at the sixty-first annual meeting of the Medical Society of Virginia, October 21-23, 1930, at Norfolk.

or following insufficient treatment there is an increased activity of the organisms. This tendency to relapses in cutaneous as well as visceral tissues makes all syphilitics potential sources of contagion. The changes in the immunity reactions will also account for variations in serological reactions in the same patient at different times.

To speak of syphilis as being latent is incorrect. It may be asymptomatic or hidden or below the threshold of clinical recognition, but so long as there are Treponema in the tissues they are active.

In addition to the recurrences of secondary type manifestations there occur tertiary forms of cutaneous syphilis. The tertiary or late type lesions result from fibrosis, vascular obstruction, and degeneration. At this stage the clinical characteristics of the lesions overshadow the laboratory measures as diagnostic criteria.

A number of the illustrations here presented are due to the courtesy of Dr. George McKee, of New York, Dr. H. H. Hazen, of Washington, Dr. J. G. Hopkins, of New York, Dr. J. H. Stokes, of Philadelphia, Dr. H. M. Robinson, of Baltimore, and Dr. M. F. Engman, of St. Louis.

Lantern slide illustration of various stages of skin syphilis and the conditions with which it may be confused are omitted.

SYPHILIS IN RELATION TO INTERNAL MEDICINE.*

By WILLIAM B. NEWCOMB, M. D., Norfolk, Va.

In the consideration of syphilis, it is well to bear in mind that we are dealing with a disease so prevalent that it affects approximately one person in every ten in the so-called civilized countries—a disease of such remarkable chronicity that an individual may live a full lifetime with it and die from some other cause—a disease so protean in its manifestations that it may produce almost any pathological picture, and in doing so imitate the clinical pattern of any one of inumerable other disease entities. Such a disease must inevitably be a constant consideration in the problems of every branch of the practice of medicine. In problems of diagnosis, no disease must be so regularly ruled out as syphilis.

Of 4,000 medical patients discharged consecutively from the Johns Hopkins Hospital 9.7 per cent of the whites and 25.4 per cent of the negroes were diagnosed as syphilitic.

Veddor has stated that 20 per cent of all males in Germany are infected.

Fournier in an extensive statistical study in France estimates that 15 per cent of the total male population of that country has syphilis.

Schlesinger puts the figure at 15 per cent in Vienna.

In Atlanta, Dr. Paullin estimates the incidence of syphilis among the adult negro patients admitted to a general hospital in that city at 20 per cent.

The Kings County Hospital in Brooklyn reports positive Wassermann tests in 13.8 per cent of all persons admitted and pathological evidences of syphilis in 21.4 per cent of 1,088 consecutive autopsies.

These figures, certainly approximately accurate, are recited to call your attention to the fact that the incidence of syphilis is startling, and to suggest that in the acceptance of such a shocking prevalence our profession in general seems to be surprisingly complacent.

The internist is chiefly concerned, of course, with the late (tertiary) manifestations of syphilis, for it is from this group that most of his problems with the disease are taken.

Of 10,000 patients with syphilis, treated in the syphilis clinic at the Johns Hopkins Hospital, and recently reported by Turner in the *Johns Hopkins Bulletin*, approximately 65 per cent of the total number of cases was classed as tertiary, slightly more than one-half of this 65 per cent was classed as latent.

This group of so-called latent syphilis, a group which has been tremendously augmented since the routine employment of the Wassermann test, is an interesting one. It includes that large group of individuals who give no clinical manifestation of syphilitic disease but who have a positive serum Wassermann reaction or some other unquestionable evidence of syphilis. A moderate and general enlargement of the lymph glands does not usually exclude from classification in this group, but in the figures of Turner which were just cited, any significantly abnormal spinal fluid findings did exclude.

It seems to me that very positive objection can be raised to the designation of latent for this group, for the word implies inactivity. It is very doubtful that the disease is inactive

*Read as part of a symposium on Syphilis, at the sixty-first annual meeting of the Medical Society of Virginia, October 21-23, 1930, at Norfolk.

even when it appears to be, for, as suggested by Conner, in spite of the absence of external evidences of activity, it is probable that pathological changes are going on steadily in some of the deeper lying structures, especially in the cardio-vascular system or the nervous system. Asymptomatic syphilis is a more accurate designation, but *concealed syphilis*, implying the threat of activity unrecognized, is perhaps an even safer name for the group.

Visceral Manifestation of Syphilis

It was stated that approximately one-half of all patients with tertiary syphilis give no clinical evidence of the disease. The other half of the tertiary group, made up of those patients who do give clinical evidence of visceral disease, is the group with which the internist has mainly to deal. Scarcely any tissue of the human body is immune from possible syphilitic involvement, and while the cardiovascular system, the nervous system, the liver and the testicle seem to be the selectively preferred tissues for syphilitic attack, it must not be forgotten that syphilis of the respiratory tract, of the gastro-intestinal tract, of the urinary tract as well as of the osseous system, is by no means uncommon. This is amply attested by the frequent reports in current literature of proven cases of syphilis of the lung, syphilis of the stomach, syphilis of the rectum, and syphilis of the kidney, as well as syphilitic arthritis, periostitis and osteitis.

The liver seems particularly prone to syphilitic involvement. In a report by Douglas Symmers from Bellevue Hospital, of 314 autopsies showing gross changes attributable to syphilis, the liver was involved in one-third of all the cases. In this same series, the testicle was involved in 39 per cent, and, of course, several different varieties of lesions were not infrequently found in the same patient. Approximately one-fifth of all cases of neurological syphilis show a coincident involvement of the cardiovascular system and conversely, according to Professor Leschke, of University of Berlin, about 30 per cent to 40 per cent of his cases of syphilitic aortitis showed also some evidence of involvement of the nervous system.

At the Johns Hopkins Hospital, however, only 9 per cent of their cases of cardio-vascular syphilis showed an associated syphilis of the central nervous system.

The tremendous predilection of syphilis for the cardio-vascular system has led some writers to consider syphilis essentially a disease of the vascular system and only incidentally involving the other tissues of the body. While this point of view seems somewhat extreme, it serves to emphasize the fact that probably nearly one-half of all cases of late syphilis show cardio-vascular involvement. This involvement may be of the aorta, of the aortic valves, of the heart muscle or possibly, though rarely, of the coronary arteries, or any combination of the pathological lesions mentioned.

The following clinical classification of cardio-vascular syphilis is offered for convenience.

1. Syphilitic aortitis without clinical evidence of regurgitation.
2. Syphilitic aortitis with clinical evidence of regurgitation.
3. Aneurysm.
4. Angina pectoris, presumably of syphilitic origin, that is, those relatively rare cases of syphilitic aortitis in which there is a definite coronary sclerosis. Even then the sclerosis of the mouths of the coronary vessels will usually be found to be only a part of a general syphilitic aortitis.
5. And a fifth group of cases exhibiting more or less miscellaneous manifestations of syphilitic involvement of the heart. The group includes those cases of diffuse syphilitic myocarditis, gumma of the heart, as well as specific disturbances of conduction.

It should be borne in mind that most patients with cardio-vascular syphilis exhibit a combination of several of the pathological lesions enumerated above.

In a statistical study of cardio-vascular syphilis, it is found that males are two or three times as apt to have cardio-vascular involvement as females, and colored males about twice as apt as white males. So that race and sex seem to be important factors in influencing the frequency of cardio-vascular involvement, but it may be that habits incident to race and sex are the actual causative factors.

The clinical recognition of a specific aortitis before there is any evidence of aortic regurgitation or of aneurysm is not as simple as we wish it were, but certainly it is most important, because at this stage promptly instituted and effective treatment may, and indeed probably will, prevent serious damage, whereas, later on, all treatment may prove without benefit.

Dr. Longcope, in an admirable paper on this topic several years ago, emphasized the following indications of early syphilitic aortitis; first, the history of nocturnal attacks of precordial or substernal pain associated with paroxysmal nocturnal dyspnoea, secondly, a tympanitic, bell-like quality to the aortic second sound, and finally, and most important, X-ray evidence of changes in size or contour of the aortic arch. In patients with a positive Wassermann reaction, the history of attacks of nocturnal dyspnoea or pain without enlargement of the heart or evidence of valvular disease is most suggestive. The slightest widening of the aortic strip as seen through the fluoroscope or as found on careful measurement in a teleroentgenogram is strongly confirmatory.

The physician is not infrequently faced with the problem of differentiating between cases of aortic insufficiency due to syphilis and cases of aortic insufficiency due to other causes but occurring in persons who show a positive Wassermann reaction. Such a differentiation may be most difficult, and on account of the difference in prognosis and management may be most important. The following points will help to identify the syphilitic cases:

The very sudden onset of congestive failure in persons previously comfortable;

The absence of accentuation of the first sound at the apex;

The absence of auricular fibrillation in cases with congestive heart failure.

In unpublished figures from the Johns Hopkins Hospital, fibrillation was present in 94 per cent of all instances of mitral disease with congestive failure in persons over twenty-five years of age. On the other hand, in syphilitic heart disease, fibrillation is extraordinarily rare.

The occurrence of congestive failure with relative bradycardia is also most suggestive of syphilitic disease.

There seems to be a marked difference of opinion among clinicians as to what percentage of the total cases of aortic regurgitation seen by them is due to syphilis and what percentage is due to other causes.

Professor Leschke, of the University of Berlin, estimates that two-thirds of all of his cases of aortic regurgitation are due to syphilis.

Sir John Cowan in discussing Professor Leschke's paper states that 37 per cent of his cases of aortic regurgitation are syphilitic in origin.

On the other extreme, Dr. F. N. Wilson, of the University of Michigan considers that 90 per cent of his cases of aortic regurgitation are the result of other causes than syphilis. Unpublished figures from the Johns Hopkins Hospital indicate that at least 70 per cent of all of their cases of aortic disease are syphilitic.

It seems to me that some of the difference in the figures may be explained by the variation in the incidence of rheumatic fever and also by the proportion of negroes to the total population in the different localities. For instance, in the United States, rheumatic fever is much more common along the seaboard and great lakes districts than in some of the interior areas. It is possibly somewhat more common along the northern part of the seacoast than along the southern. The presence of the negro in the south with his marked proneness to syphilitic cardio-vascular involvement would increase the relative incidence of aortic regurgitation due to syphilis in that area.

There is universal agreement that practically all of the cases of aneurysm of the aortic arch are syphilitic in origin, the exception being those cases of aneurysm due to non-specific sclerosis and the very rare instances of rheumatic disease of the aorta with cirsoid aneurysm and aortic insufficiency.

Treatment

Any presentation of an orthodox plan of treatment of visceral syphilis is purposely omitted from this paper. A few facts relating to treatment which present the point of view of the internist may be worthy of emphasis.

Our special branch of medicine is concerned almost solely with late syphilis. It is unnecessary to say that there would be relatively no such thing as *late* syphilis, if prompt and effective treatment were accorded every case of *early* syphilis. There is a depressing relationship between the proportion of late syphilis of the viscera and untreated or inadequately treated primary syphilis. The routine inclusion of the Wassermann test in every general physical examination has been tremendously effective in revealing the presence of latent syphilis in large numbers of persons in whom the disease had not been suspected. Adequate treatment of these people will very substan-

tially reduce the number of them who later on would develop frank lesions of cardio-vascular syphilis or some other form of visceral syphilis.

The prompt recognition by the physician of early visceral damage, especially of early cardio-vascular disease, and the institution of effective treatment, will prevent advanced changes which are often irreparable.

The treatment of even fairly advanced cardio-vascular syphilitic disease is not always quite as discouraging as it is usually considered. We are occasionally agreeably surprised at the improvement obtained in these patients, the relief of pain and dyspnoea and the increased number of years of active life we are able to give them.

In the management of those cases of very advanced cardio-vascular syphilis with frank evidence of congestive heart failure, rest in bed and digitalization until compensation is at least partly restored, then the use of potassium iodide and mercury or bismuth, with later small doses of neo-salvarsan, cautiously increased, will probably give the best results. The prognosis in this group is, however, always grave and the outlook for a long life is never good. In the figures of the Johns Hopkins Hospital, 38 per cent of all of their cases of cardio-vascular syphilis with congestive heart failure died during the first admission to the hospital. And of those who were discharged as improved, the average length of life was less than two years.

220 *West Freemason Street.*

SYPHILIS IN ITS RELATION TO SURGICAL NEUROLOGY.*

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The progress and expansion of surgical neurology in the past ten years are due to more precise diagnosis, a clearer visualization of the pathology, and better operative technic. It is generally recognized that syphilis of the nervous system is capable of producing lesions which may give a clinical picture closely resembling that of tumor of the brain or cord. Many of these lesions are curable by appropriate medical treatment. Such cases constitute perhaps the majority of those cases of syphilis which invade the central nervous apparatus. The fact should not be lost sight of, however, that syphilis may also bring about a high degree of intracranial pressure which requires surgery for its relief.

While the involvement of the brain may not be clinically recognized until years after the primary lesion, the actual implication of the nerve structures by syphilis generally takes place in the early stages of the infection. The headache in the early secondary stage is a signal of invasion of the meninges by the luetic process. The former tendency to regard chronic brain impairment as due to syphilis, even in the absence of a history of infection or a positive Wassermann reaction, has fortunately been curbed by the employment in neurosurgical clinics of accurate mechanical tests in the diagnosis of diseases of both the brain and spinal cord.

The most frequent effect of syphilis of the brain is chronic meningitis, and the usual location of lesions of luetic origin is at the base of the brain, particularly about the optic chiasm and interpedunculer region. The process is generally diffused, and the pia-arachnoid of the cortex may be involved. The wide diffusion of syphilitic meningitis in many cases and its extension into the brain tissues, accounts for the variety and multiplicity of the symptoms. In basal meningitis due to syphilis, there is a yellow, mottled exudate covering the meninges. In some places this exudate becomes firm from connective tissue proliferation and adheres firmly to the base of the brain. The exudate often spreads over the cranial nerves, particularly the ocular motor, giving paralysis of the extraocular muscles. So frequently does syphilis involve the intrinsic or extrinsic muscles of the eye that fixation of the pupil and ptosis have become to be regarded by some as almost pathognomonic of this disease. In this connection, however, it should be stated that much attention has lately been given to basal aneurysms as a cause of ocular palsies, and Fearnsides (Brain, 1916) found basal aneurysms forty-four times in 5,432 autopsies. It might be stated, perhaps, that ocular palsies in young people are due to syphilis in more than half of the cases, and many of the remainder are accounted for by some congenital malformation of the blood vessels at the base of the brain. The variations of symptoms, particularly the transient paralyses of the cranial nerves, may be explained by the syphi-

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litic exudate which develops, proliferates and is absorbed. The repetition of this process may bring about other attacks of cranial nerve palsy with recovery in a short time.

Vascular syphilis of the brain, according to Oppenheim,[1] ranks next in frequency to syphilitic meningitis. The involved vessel may have its walls thickened and the lumen narrowed to such an extent that a block of the vessel may easily take place, causing hemiplegia, aphasia and visual disturbance, depending upon the region of the brain involved. While small gummatous tumors are not infrequent in cerebral syphilis, gumma of sufficient size to produce increased intracranial pressure is a very rare lesion, and only two have been recognized in our clinic. Gumma of the brain always arises from the meninges, and when it produces intracranial pressure, it requires operation and removal as urgently as do other neoplasms. In such cases, active antiluetic treatment should be administered after the operation.

The pathology of syphilis of the brain thus briefly reviewed is given for the purpose of enabling a comparison between the picture presented by this disease and that resulting from a cerebral neoplasm or other space-restricting lesions. It is quite evident that syphilis should be excluded as far as it is possible to do so by careful history, clinical study and Wassermann tests, whenever diagnosis of a patient with chronic cerebral impairment is attempted. It should be remembered, however, that a patient with constitutional syphilis may also have a brain tumor, and our experience has been that brain tumors are far more often erroneously treated for syphilis than syphilis for brain tumor.

The type of cerebral syphilis which produces intracranial pressure, and therefore more likely to be confused with tumor, is syphilitic leptomeningitis. In such patients there is usually a definite and considerable lymphocytosis of the spinal fluid, due to the meningeal involvement. The arachnoid is cloudy, and its appearance has been likened to a thin film of paraffin which becomes thicker as it covers the vessels of the cortex. Because of the increased intracranial pressure in these cases, there is probably a blockage of the cerebrospinal fluid, due to chronic inflammation of the meninges, particularly about the arachnoid villi which are the exits of this fluid from the subarachnoid spaces into the general circulation. A choked disc is often present in cases of intracranial pressure from syphilitic leptomeningitis, and Fehr,[2] in a study of 2,600 cases of syphilis, found choked disc in thirteen, or one-half of one per cent.

It is extremely difficult in many cases of chronic inflammation of the brain to determine whether the patient with choked disc is a syphilitic with a tumor, or whether the pressure is due to syphilitic meningitis. In a few cases with choked disc and a positive Wassermann reaction, tumors have been found, which illustrates the possible combination of the two conditions in the same patient.

It is a well-known fact that a small percentage of patients with syphilis of the central nervous system will have a negative blood Wassermann. The Wassermann reaction on both the blood and spinal fluid had been negative on several tests on a number of patients in one clinic, while later on, in another laboratory the reaction proved to be strongly positive.

In cases of high intracranial pressure, as shown by choked disc, we have hesitated to perform a diagnostic lumbar puncture because of the obvious danger should the pressure be due to tumor. Perhaps there is little risk in doing a lumbar puncture on patients whose intracranial pressure is due to syphilis, and once this diagnosis is established, mild pressure may be relieved by this measure.

Among the complaints of patients with syphilis, severe headache is the most constant, and while the headache may be referred to any of the cranial regions, it is most commonly of the suboccipital type. Frequent vomiting, diplopia, convulsions, staggering, sensory epilepsy, intellectual impairment and focal lesions of various kinds are some of the signs and symptoms usually found. Furthermore, in following the case from day to day, a marked inconstancy and variability is noted in the clinical picture. It is evident that such shifting and multiplicity of symptoms must be due to widespread or multiple lesions, and cannot be explained by a solitary gumma or neoplasm. In some cases with high intracranial pressure, even when the Wassermann is positive, it is necessary to inject air into the ventricles and follow this with an x-ray examination of the head, to make a diagnosis between tumor and syphilitic leptomeningitis.

The following cases may be cited in this connection:

F. R. W., married man, aged thirty-eight, admitted to Memorial Hospital on April 24, 1929, complaining of headache and dizziness. The history, except for the present illness, is not of great importance. The patient had lost forty-five pounds in weight in seven weeks before coming under our observation. He was a man of good habits, and there was no history of a leutic infection. He stated that for a month before admission to the hospital, he had had a sharp, shooting frontal headache with photophobia. He had an attack of vomiting which lasted nearly three days. He was treated for sinus infection. Two weeks before admission he had an attack of dizziness and vomiting. He then noticed a deafness in the right ear, with tinnitus. There was bilateral choked disc of a mild degree, but no exudate or hemorrhages in the retinae, and no paralysis of the eye muscles. On walking he staggered, falling first backward and then to either side. Mentally he appeared to be fairly alert. Blood pressure 135/90. Pulse rate was not unduly slowed. Blood Wassermann was negative. The x-ray of the head was negative. The patient was considered a brain tumor suspect and a ventriculography was done. X-ray of the head after the injection of air into the ventricles showed both ventricles to be normal in size and position, with free communication of air. It was then believed that the patient had encephalitis of undetermined character. A spinal puncture had not been done because of the presence of choked disc and other evidences of tumor. He was returned to Dr. Tucker, who had referred him to us, and a spinal puncture was advised for the purpose of relieving the intracranial pressure. The ventricular fluid had shown a negative Wassermann, but the spinal fluid was strongly positive. Under a vigorous antiluetic treatment the patient made a prompt recovery. A decompression was not advised in the case of this patient because the ventricular pressure was only 250 mm. water, and the choked disc was of a moderate grade. Had the swelling of the discs advanced under antiluetic treatment, Dr. Tucker would have advised the operation for the protection of his vision. The interesting feature of this case was the evidence of progressive cerebral impairment without local symptoms and without variability and shifting of findings often seen in cerebral syphilis with increased intracranial pressure. It was believed that the patient had a form of encephalitis, after an air injection was done, but the type of infection was only certified by a later examination of fluid withdrawn at lumbar puncture.

A second case is that of Mrs. A. C., aged thirty-five, white, married. Admitted to the hospital on May 1, 1928, complaining of occipital headache, vomiting and tinnitus in right ear. Three months before admission she was delivered at term of a normal child, and her vision began to show impairment. Four weeks before admission she contracted a severe cold and began to vomit. She then developed a violent headache with dizziness which caused her to fall occasionally. The vomiting was of the projectile type and usually occurred in the morning. Headache increased and finally became throbbing and violent. Hypodermics became necessary to enable her to sleep. Double vision developed, with fluffy objects of various colors always moving in the field. She could read for only three or four minutes at a time, when the words seemed to run together and violent pain in the eyes developed. Numbness and tingling in both hands was troublesome. Tinnitus, with noise like a train pulling a grade, was present when right ear was buried in the pillow. There was no history of a primary luetic infection. The patient had had a number of abdominal operations. The family history need not detain us. Examination showed a well-nourished woman who was complaining of severe headache. The following findings were demonstrated on neurological examination. The blood Wassermann was strongly positive. The spinal fluid pressure registered 400 mm. water. The pupillary reaction could not be tested because the patient had had a mydriatic the day before coming to the hospital. She had choked disc of 4 diopters with hemorrhages and exudates in each eye. The visual fields were normal, but there was a marked diplopia with no obvious extraocular paralysis. In testing her gait she would stagger, which was attributed to dizziness. Deep tendon reflexes were active and bilaterally equal. There was no ankle clonus, Oppenheim or Gordon. She refused the test for Babinski. Abdominal reflexes were absent on both sides. Blood pressure 105/70. The spinal fluid contained about 224 lymphocytes,

but the specimen appeared to be unsatisfactory in so far as the Wassermann was concerned. With these findings and the general evidence of an increasing intracranial pressure, it was thought advisable to do a right subtemporal decompression to protect vision and relieve headache. This was done five days after admission to the hospital. Improvement in her condition following the decompression was promptly manifested. Her headache was relieved and the visual hallucinations disappeared. She was then given intensive antiluetic treatment by Dr. L. T. Price. Her Wassermann became negative, and all clinical signs of her trouble vanished.

In reference to this case, the argument might be made that the same results could have been accomplished by medical treatment. Possibly this is true, but it is also probable that a longer time would have been required to accomplish relief, and in the meantime serious damage to her visual apparatus might have occurred. In the presence of choked disc, due to pressure, one cannot afford to temporize unduly if vision is to be protected from loss or impairment. In dealing with this patient, because of marked impairment of vision and a high degree of choked disc, there was need for some mechanical measure to protect vision. Sir Victor Horsley recommended decompression for choked disc caused by gumma. Cushing[3] likewise spoke favorably of decompression when vision was threatened by choked disc, and believed that the antisyphilitic treatment would be more rapidly effective after the intracranial pressure was relieved.

The relationship between trauma and the appearance of syphilis of the brain has been commented upon by Oppenheim and others. Oppenheim believed that given a constitutional syphilitic, a head injury is a factor in localizing infection in the brain. This opinion of Oppenheim is of great importance in the award of compensation by industrial commissions. The following case in this connection is of some interest:

W. H. P., male, aged twenty-three, admitted to hospital because of severe headache which began one month before admission. The headache was located in the right occipital region and was of a boring type. Sometimes it was dull, and again lancinating. No drowsiness, diplopia, convulsions, blurring of vision, numbness or weakness of any of the extremities was present. There had been a fracture of the skull in right occipital region thirteen years before. Unconscious forty-eight hours. Occasional headache after recovery from brain injury. Chancre three months before admission to hospital, with disappearance of positive blood Wassermann on treatment. Examination essentially negative except for choked disc of low grade—1-2 diopters. Enlarged epitrochlear glands. Slight pain in postcervical region on flexing neck. Blood Wassermann negative. Spinal fluid Wassermann strongly positive. The fluid contained 228 lymphocytes with a heavy trace of globulin. The fluid pressure was 400 mm. water.

The interesting point in this case was the rapid development of symptoms of cerebral syphilis in a patient who had received one severe and a number of minor head injuries. One cannot positively affirm that this patient was made more liable to cerebral syphilis by reason of his brain injuries, but it is not unlikely that the damage done to the brain by repeated injuries may have had a relationship to the later implication of the brain.

The problem of differentiating syphilis of the spinal cord from tumor of the cord, does not arise so frequently as is the case in lesions of the brain. It is true that a syphilitic meningo-myelitis may produce cord impairment which closely resembles that of a neoplasm. A gumma of the cord appears to be even more rare than that of the brain, although these have been reported. The diagnosis of the important lesion in such cases, whether due to syphilis or tumor, must rest upon the demonstration or exclusion of fluid block, by the Queckenstedt test. The injection of lipiodol may be used after the block has been demonstrated, to determine the level of the lesion. If serious cord symptoms are present and pressure upon the cord is demonstrated by block, an operation is urgently required, regardless of whether syphilis or tumor causes the pressure. Should a gumma of the cord be discovered at operation, it should be removed, provided this can be done without serious damage to the cord. If removal is impracticable, provision should be made for the relief of pressure upon the cord, and active antiluetic treatment given. It will thus be seen that the neurological surgeon is interested in syphilis only when mechanical measures are required for relief of pressure, whether upon the brain

or spinal cord. Naturally, as a preliminary procedure, he should make every effort both by clinical study and diagnostic tests to determine before operation the probable pathology of the lesion with which he has to deal.

In summarizing briefly the points intended to be brought out in this paper, the following statements seem worthy of mention:

1. Syphilis of the central nervous system may closely imitate the symptoms of localized lesions of the brain, such as tumor, abscess and circumscribed inflammation of the meninges. The clinical resemblance of syphilis of the brain to other cerebral lesions may exist even when it does not cause intracranial pressure. It becomes of interest to the neurological surgeon when it exists as a localized lesion, such as gumma, or when it causes high intracranial pressure by producing a diffuse leptomeningitis.

2. The pathology in cases of syphilis causing intracranial pressure is that of diffuse leptomeningitis, or meningo-encephalitis, and the pressure upon the brain is probably caused by blockage of the cerebrospinal fluid. This blockage is due to the chronic inflammation of the meninges which prevents the cerebrospinal fluid from gaining access to the general circulation.

3. The symptoms of cerebral syphilis causing intracranial pressure are inconstant, shifting and variable. Explanation of this variability is found in the diffuse nature of the pathological processes which may involve the cranial nerves, cerebral cortex, base and cerebellum. The signs of brain tumor, once established, tend to be fixed, permanent and progressive, unless relieved by suitable treatment.

4. The mistake is much oftener made in considering a brain tumor a gumma, than the reverse. A solitary gumma of sufficient size to cause increased intracranial pressure is an extremely rare lesion, which generally requires removal or a decompressive operation. Particularly is this true if the patient has a choked disc.

5. Impairment of vision with choked disc, exudate and retinal hemorrhages, if not promptly improved by antiluetic treatment, should be given a subtemporal decompression to protect vision and relieve headache. After the pressure is relieved by subtemporal decompression, medical treatment appears to have more prompt and effective results.

6. In some cases of cerebral syphilis with pressure upon the brain, and a choked disc, but a negative blood Wassermann, it may be necessary to do a ventricular injection of air to make a diagnosis. We believe it unwise generally to do a lumbar puncture in the presence of a high-grade choked disc.

References

1. Oppenheim, Hermann: Text Book on Nervous Disease, Vol. 2, 1908.
2. Fehr, O.: Ueber die syphilitischen Rezidive am auge nach Salvarsanbehandlungen, *Med. Klin.*, 8:942, 1912; Ueber die Wirkung des Salvarsans auf das Auge, *Centralbl. f. Prakt. Augenh.*, 36:164, 1912.
3. Cushing, Harvey: Surgery of the Head, in Keen: Surgery, Philadelphia. W. B. Saunders Company, 1908, vol. 3, pp. 1-276.

Professional Building.

PREVENTION OF SYPHILIS.*

By C. B. RANSONE, M. D., Roanoke, Va.

From a careful study of recent reports of the one day surveys made by the U. S. Public Health Service in Virginia and elsewhere, of statistics from hospitals making routine Wassermann tests and from other reliable sources, it would seem that the estimates of the incidence of syphilis given by the speakers who have just preceded me are very conservative. Surely we are well within the bounds of fact when we conclude that at least 10 per cent of the entire population of Virginia is infected with this horrible disease.

You have just heard something of the ravages of this disease, but is it an important factor in producing economic loss, social decay, physical deterioration and premature death?

To emphasize the position of syphilis as a cause of death I wish to present a chart showing the number of deaths in Virginia from several of the principal causes as compared with the deaths actually caused by syphilis when the death certificates showing other causes have been corrected in accordance with the percentages in the accompanying table.

Syphilis is not only the greatest killing disease but it is also the greatest producer of invalidism.

If the primary aim of public health work is the lengthening of the span of useful human life; the elimination of economic loss from ill-

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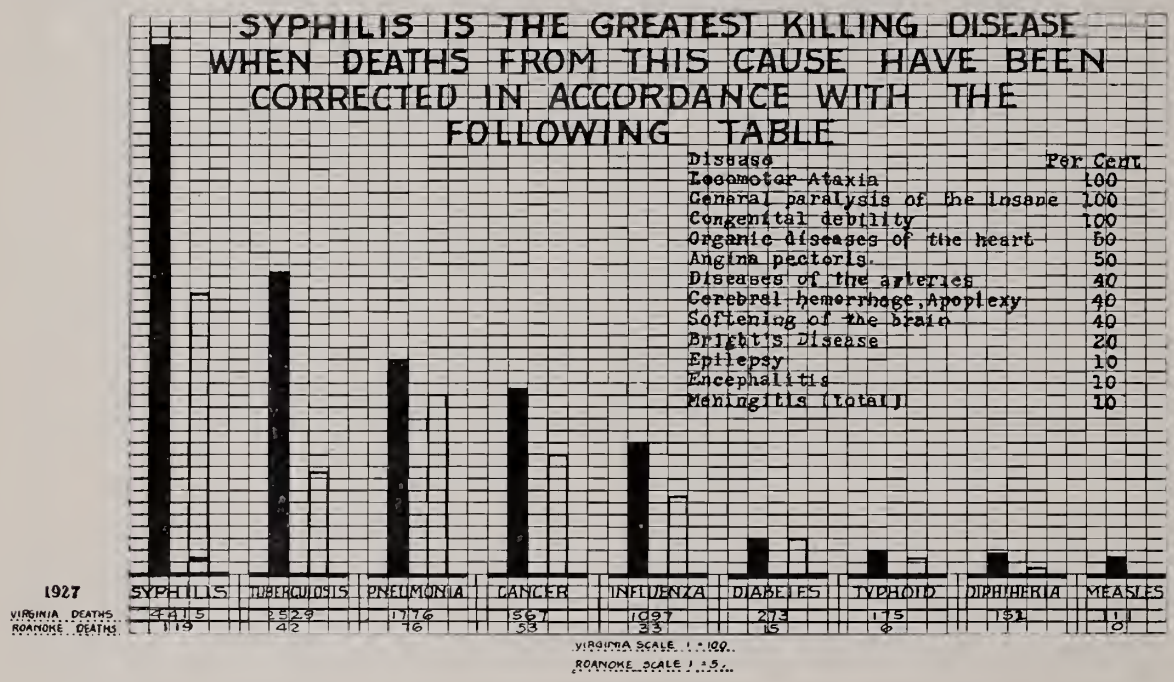
ness; the increasing of earning capacity through good health; then this disease, which so reduces efficiency, occasions so much financial loss and produces so many deaths, surely constitutes the greatest challenge to those engaged in preventive medicine as well as to the medi-



Proportions of Deaths Under Other Classifications That Should Be Ascribed To Syphilis

Disease	Per Cent	Number of Deaths, Roanoke, Va., 1927	Percentage Due To Syphilis	Number of Deaths, Virginia, 1927	Percentage Due To Syphilis
Syphilis	100	8	8	296	296
Locomotor ataxia	100	1	1	21	21
General paralysis of the insane	100	0	0	64	64
Congenital debility, icterus, sclerema	100	9	9	397	397
Angina pectoris	50	10	5	332	166
Organic diseases of the heart	50	112	56	3897	1948
Diseases of the arteries, atheroma, aneurysm	40	19	7	326	130
Cerebral hemorrhage, apoplexy	40	54	22	2056	822
Softening of the brain	40	0	0	22	9
Bright's Disease	20	49	10	2722	544
Epilepsy	10	1	0	61	6
Encephalitis	10	3	0	34	3
Meningitis (all)	10	9	1	95	9
Total deaths due to Syphilis			119		4415

1927 Deaths in Virginia—All Causes—28,772.
1927 Deaths in Roanoke—All Causes—859.

cal profession as a whole, for, in fact, we are all practitioners of preventive medicine.

Since in the control of this disease we have to deal with one of the cardinal appetites of man—sex desire—and with the will of man, its prevention is exceedingly difficult. But because difficult, should it be ignored? As men, we must answer in the negative and determine that in its control we will put forth effort in direct proportion to the magnitude of the task.

Time does not permit even the mention of many of the recognized measures to be employed in any well planned campaign of venereal disease control. An adequate program should, of course, include educational measures, recreational measures, protective social measures, law enforcement measures and medical measures, each with many subdivisions. The control of the venereal diseases is clearly a public health problem.

Local endeavor should, of course, be coordinated with and have the leadership of the State Department of Health. Leaving the more local phases of control—clinics, lectures, etc., and viewing the subject from a statewide viewpoint, I wish to emphasize but two control measures, namely, Education and Law Enforcement.

Education: The cause of this disease and its mode of transmission are well known. It is transmitted directly from the sick to the well and in the majority of instances this transfer takes place in unlawful and immoral conduct—sex intercourse out of wedlock. Much of this conduct is a direct result of the lack of self-control, ignorance of the fundamental facts of sex hygiene and ignorance of the danger of promiscuous sex relations. If this be true, it would seem that the remedy lies in education—education that not only includes the imparting of knowledge but also embraces the inculcation of those principles and ideals of life which incline the will to subordinate self for the common good and to practice brotherly love.

It is not surprising that at a notable meeting of Churchmen recently held in London the following pronouncement relative to sex education should have been made: "In all questions of marriage and sex the Conference emphasizes the need of education. It is important that before the child's emotional reaction to sex is awakened, definite information should be given in an atmosphere of simplicity and beauty. The persons directly responsible for this are the parents, who in the exercise of this responsibility will themselves need the best guidance that the Church can supply."

It is the general opinion that instruction in sex matters should be given by parents to their children in the home. But are the parents of the present generation prepared to give this instruction? I think not.

It is quite true that neither knowledge of the right nor fear of punishment always results in correct behavior, but fear of hell fire has been a great help in overcoming many a temptation. It is the plain duty of parents to instruct their children and to warn them of danger. From the cradle to the altar they should invariably be told the truth concerning sex matters.

This beautiful story of life should, of course, be unfolded gradually, as prompted by questions from the child, and always in a simple, refined, natural, matter-of-fact way. When they reach adolescence they should know the fundamental facts of sex hygiene. They should know that continence is not incompatible with normal physical and mental development and perfect health; that the sex organs do not require exercise to be kept in perfect condition; that practically 100 per cent of prostitutes are infected with one or all of the venereal diseases; that the great pox is much worse than the smallpox; that gonorrhea is more to be feared than a bad cold; that promiscuous sex intercourse is not only immoral but exceedingly dangerous; that the monogamous life is not only moral but the happiest life, and many similar fundamental sex facts.

If the present generation of parents are not prepared to give this information—and there seems to be no practical way of teaching them, then it seems that the starting point must be with the present generation of children in our schools, who will soon become parents. But do the teachers know what to teach them, or when, and how to present the information? The knowledge of this subject possessed by many grammar and high school graduates would indicate that we must answer this question in the negative.

A recent questionnaire to the Teachers Colleges of the State revealed the fact that for those preparing themselves to become teachers a comprehensive course in anatomy and physiology is not required and in only a few

institutions is such a course elective. While all the colleges offer a short course in Health Education, there seems to be no thorough course in personal and community hygiene.

It would seem, therefore, that the first step to be taken in the control of venereal diseases in Virginia through education would be to arrange for a more thorough course of instruction for the teachers of the State in anatomy and physiology and in personal and community hygiene. In fact, all preventive health work would receive a tremendous impetus from such a course of instruction. Under the West law abundant authority is given the State Commissioner of Health to arrange with the Commissioner of Education such courses in the teacher's colleges. The policy of the Bureau of Social Hygiene of the State Health Department in sending qualified speakers to the teachers' colleges to give special courses of instruction in sex hygiene and sex education was a very wise one, and it is to be regretted that this practice has been discontinued.

Of course, sex education should not be over emphasized in the schools, neither should it be entirely neglected. There is a happy middle ground where it may be easily correlated with such subjects as biology, botany, nature study, hygiene, etc., if the teacher herself knows the subject thoroughly and knows how to present it. May the day soon come in Virginia when in her homes, in reply to the innocent question, "Where do babies come from?" we shall no longer hear such infernal lies as the story about the stork, the baby in the doctor's satchel, or the baby coming down from heaven, but rather the truth—the story of the egg and the nest—simply told, which will be both satisfying and helpful and will at the same time inspire in the child a wholesome confidence.

Law Enforcement: Virginia has an excellent venereal disease control law. In considering this phase of the subject, we should ever keep in mind the three distinct classes of those composing the source of infection.

We have among those infected with syphilis, the ignorant and careless, the intelligent and considerate, and the intelligent and vicious.

1st.—There are those who know very little of the seriousness of their condition, or of the danger to others, and are, therefore, very careless. These are tragically dangerous. This class includes many morons, semi-morons, and feeble-minded who should be handled by the Department of Public Welfare and confined indefinitely in institutions for the feeble-minded.

2nd.—There are those who understand the seriousness of their condition, the danger to others, and are mindful of the welfare of others. These need no special attention by health authorities, but may be treated by the family physician with safety to themselves and the public.

3rd.—Finally, we have the largest and most dangerous group, composed mainly of prostitutes, those who know the seriousness of their condition and the danger to others, but are perfectly indifferent to the welfare of others. These are criminally dangerous and should be placed in absolute quarantine. This group constitutes the greatest menace to society, though at present it is receiving but little attention.

It is well known that the majority of this prostitute group—the scum and driftwood of society—float from city to city as prospects for better business appear from time to time. Since they have no permanent abode, they should not be considered the problem of any particular community, but of the State as a whole. The establishment and maintenance of a suitable institution for the quarantine and treatment of this group by each city or community would entail much unnecessary duplication in supervision and overhead expense, and should, if possible, be avoided through consolidation. Therefore, it seems that the greatest need—certainly the greatest public health need—of the State today is a suitable institution (or several institutions) for the quarantine, treatment and rehabilitation of prostitutes and other females of this third group.

We have several institutions for the care of those infected with tuberculosis. We are told that the predisposing cause of many cases of tuberculosis is syphilis. We have several intitutions for the insane that receive an appropriation from each legislature of over a million dollars. We are told that at least 25 per cent of the insane have syphilis. Then, why not a few institutions for the prevention of syphilis?

In order that any infectious disease may be controlled, it is imperative that its presence in the community be known to the health authorities. The Virginia venereal disease law very rightly requires the prompt reporting of venereal diseases by the physicians of the State;

at first by office number, and, later, if the patient refuses or neglects to take regular and sufficient treatment, the case must be reported by name and address. If I may judge this entire group by the physicians with whom I have daily contact, I feel safe in making the assertion that you do not report your cases of syphilis. And why not? You report carefully and promptly your cases of smallpox, and you are aware that there is even greater danger to the individual and to the community in those infected with the great pox. The answer is easy. On the one hand, the case of smallpox is promptly quarantined, while, on the other hand, the case of great pox is not quarantined and in the majority of instances nothing is done about it.

The health officer may send a notice to your patient to return to you for treatment, but, unless the patient knows that if she does not return for treatment she will be placed in detention, she is apt to pay but little attention to such a notice. The practical enforcement of the entire law is based on quarantine. Hence, the need for suitable places of quarantine in each community where patients may be held for examination, as well as conveniently located state institutions for thorough psychological, mental and physical examinations, and appropriate, intelligent treatment and social readjustment.

In conclusion, may I urge that you make more frequent use of your Keidel tubes (the tube with a Comas window needle is very convenient), for the more Wassermanns you take, the more your interest in syphilis will increase and the more grateful will be your patients. It is to be hoped that the Bureau of Social Hygiene of the State Health Department may soon be able to furnish with the mailing cases sent from the State Laboratory, Keidel tubes, which will eliminate the cleaning and sterilization of syringes and needles by physicians, and greatly simplify the process of taking blood for Wassermann tests. As a control measure, the value of early diagnosis and thorough treatment by the physicians of the State cannot be over-estimated.

You are loyal citizens of Virginia, intensely interested in her material and social progress, and, as interested intelligent citizens, may I urge that you use your influence in your several communities to create a public sentiment in favor of a more adequate venereal disease control program for Virginia, embracing education for the non-infected; early diagnosis, and adequate therapy for the infected, with quarantine for the depraved and lawless.

Discussion of Papers by Drs. Smith, Newcomb, Coleman and Ransone, in Symposium on Syphilis

Dr. Carrington Williams, Richmond: This discussion that we have heard from the various specialists in this type of work has covered the ground very thoroughly. I imagine I was asked to open the discussion to call your attention to a few syphilitic lesions that may simulate surgical diseases. Dr. Newcomb and Dr. Smith have both brought out the fact that syphilis can simulate almost any disease. From the surgical standpoint, that is more interesting and more important than the actual syphilitic lesions that come under our care. Dr. Smith's slides have shown, I think, practically all the lesions it is important for us to be aware of. The most interesting primary lesions are extragenital chancre. Those of the skin, tongue, and lip simulate epithelioma in these regions, and unless we are very careful to check up by dark-field examinations, we may very easily be mistaken. Chancre of the female breast, as shown by Dr. Smith's picture, might very easily be mistaken for malignant disease, particularly Paget's disease of the breast. Then chancre of the finger, when of an indurated, sluggish character, should put us on our guard. I think in any extragenital chancre we may mistake it for a malignant growth, and in many malignant growths of the genitalia we might mistake it for syphilis. So we should get a dark-field examination and keep in mind that it may be epithelioma.

Now, in tertiary lesions the gummas may simulate malignant disease, such as fibrosarcoma, and sometimes even with excision of tissue it is difficult to mage a diagnosis. I had two interesting cases in the thyroid gland. Those two cases exactly simulated carcinoma of the thyroid. So far as physical examination of the patient was concerned, there was no difference between these gummas and malignant disease. Both, however, after section, were diagnosed as gumma, and both cleared up entirely on antisyphilitic treatment. The basal metabolism, in contrast with hyperthyroidism, was quite low.

In abdominal lesions, the first that come to our attention are lesions of the stomach, about which there is some debate as to whether there is actually syphilis of the stomach. I think there is but that it is probably very rare. The most frequent syphilitic lesion, probably, is infiltration about the bile ducts, causing occlusion of these small ducts and resulting in jaundice and enlargement of the liver. In the gastro-intestinal tract probably the most frequent lesion we see is stricture of the rectum. A large percentage of strictures of the rectum are due to syphilis. Not infrequently, in connection with stricture of the rectum there is a relaxation of the anal sphincter, as one of the first manifestations of degeneration of the posterior columns of the spinal cord.

Syphilis of the bone is not infrequently seen. Many are peri-osteitis. Not infrequently there is so much laying down of new bone that there appears to be a tumor of the bone. I remember a man that came to a hospital in Richmond with a large mushroom-like growth, with two large ulcers on the leg. After removing this growth of bone the ulcers healed.

Dr. C. E. Conrad, Harrisonburg: We were very

fortunate this morning in hearing such a masterful discussion of a disease that leaves its mark from infancy to old age, and even before birth, by affecting the baby in utero. My work being entirely with congenital syphilis, I shall have to limit my discussion to that phase of the subject.

The work by Jeans and Cook, of St. Louis, in examing over two thousand cases, showed there were 15 per cent of positive cases in negro children and 2.8 per cent positive in white children. This agrees very closely with records from the statistics of other men, the present view of syphilis being that in the true sense it is not hereditary but carried through the placenta from the blood stream of the mother to the baby. In that way there is offered a wonderful field for preventive medicine. If routine Wassermanns were done in all cases in early pregnancy, we could prevent a great many cases of congenital syphilis. In fact, Moore states that if the mother is treated before the fifth month, fully 95 per cent of children of syphilitic mothers will be born without syphilis. If not treated, then 96 per cent of children of syphilitic mothers will be born with syphilis. When we realize the great difference there, and that, as has been stated this morning, about 10 per cent of the population are syphilitic, and proportionately as many females as males, you see what a vast amount of work can be done toward the prevention of syphilis, and from the public-health viewpoint what a great thing can be accomplished.

Recognition of congenital syphilis is just as important as recognition of adult syphilis, as brought out by Dr. Newcomb. If we get these cases early, my personal experience is that if the case is brought in and treated before the first year, except the severe cases which die in the first six weeks of life, practically all of them will become clinically negative and serologically negative without much difficulty; whereas, if the case is picked up after the seventh year these cases can be clinically cleared up but frequently it is very difficult to get them serologically cured.

If the lesions occur around the mucocutaneous orifices they form a weeping erosion with later scar formation, and if these are looked for in adult life we can pick up cases of congenital syphilis by these scars. Then, in an infant with snuffles, if the discharge is purulent and hemorrhagic in type it is almost always syphilis.

Congenital syphilis affects all parts of the body, just as syphilis in the adult, the liver and cerebrospinal system being more often involved in infancy.

Dr. Roy K. Flannagan, *State Board of Health*, Richmond: I have only a word or two to say with respect to the public-health phase of this problem. I just want to emphasize, or re-emphasize, the chart that has been placed up there before you. Syphilis is a terrific problem; as Dr. Osler has well said, it ramifies through everything. No doctor doing general practice can afford not to take a Wassermann on his cases as far as possible as a routine measure. Someone was talking to me yesterday who made an assertion that did not seem to me could be true, but he stated it as a fact—that some hospitals in Virginia, good hospitals, do not make routine Wassermann tests. How they can be sure of their diagnoses without this test, I do not know. This thing is mixed up with everything else, and I do hope this splendid symposium will impress itself upon all who are here, so that a routine Wassermann will be made in their practice as far as possible, that is, as far as you can get your patients to consent to have the blood test made. Patients will rarely object.

Dr. Ransone made some reference to having a place of quarantine. The last legislature did make a gesture toward it, not as a segregation place for syphilitics, but a misdemeanant farm for women was provided for. They would have been building by this time except that the place selected was objected to by certain people living in the neighborhood. When this misdemeanant farm becomes an accomplished fact, the treatment of syphilis will be a matter of routine among the inmates.

I do not know whether you know it or not, but it is quite possible under the law to arrest a careless syphilitic; you can incarcerate them in jail, and if you can incarcerate them in jail you can certainly incarcerate them on this farm. No doctor wants to see a sick person in jail, so he hesitates to report them now. But I hope you will report your cases. On numbers of occasions I have had reports of careless cases and have gone right back at them; we tell them that the doctor reports them as careless cases not returning for treatment, and if they do not comply with his instructions, jail stares them in the face. Usually they report back for treatment.

Another point,—a doctor often has a case under his charge to whom he gives a dose or two of arsphenamin, but the patient is unable to pay or does not pay. A doctor will be willing to risk losing seventeen cents a dose while a contribution of ninety cents a dose is out of reason. We have both neoarsphenamin and sulpharsphenamin that we can distribute to the doctor at cost. We have to send it to you C. O. D., because we have no appropriation for it; it is paid for by a revolving fund. Now, doctors sometimes get to using one manufacturer's product and wants that and nothing else. Maybe what we have is not just what you want. If enough people say that they want a different product from the one that the State is dispensing, I assure you that we will get it for them.

Dr. T. V. Williamson, Norfolk: We have just heard from Dr. Flannagan from State Headquarters, and I would like to reply to him as one who is in the hurley-burley of the firing line in the battle against syphilis. Being associated with two of the large venereal clinics in the City of Norfolk, where a considerable number of syphilitic cases are treated every year, I know full well that there is an excellent United States law aimed at the suppression of syphilis, and that there is also an excellent State law for the same purpose. Yet somehow there is no liaison between the clinics on which I serve and State and National Headquarters. The line of communications is cut somewhere, so we on the firing line get neither moral nor actual reinforcements from the places from which we feel that we should get both.

It is the routine of the clinics to report these cases to the Health Department; but, so far as I know, there is no follow up on the part of the Health Department. Syphilitic patients come in to the clinics, take one, two, three or four doses of salvarsan, as they choose, and then drop out to become spreaders of syphilis to others, or to be tertiary syphilitics themselves. There is no intelligent and concerted effort in Norfolk to prevent the spread of the disease.

Now, Dr. C. F. Marshall, of the Royal College of Surgeons in England, says, "The problem of the prevention of syphilis is one that sooner or later will have to be grappled with by all nations, and that nation which first successfully deals with the problem will survive in the struggle for existence." And Michael Levy, a famous teacher of preventive medicine a decade or so ago, says of it, "The extir-

pation of this leprosy of our time, which is called syphilis, is not beyond the powers of the State."

It can be prevented, and I want to say this: since we are so fully awake to the enormous amount of syphilis in this country, why not begin to fight it in a manner that is marked by both aggressiveness and common sense, and not continue a policy toward it that is characterized by inanity and futileness? Why not dedicate this meeting of the State Medical Society to a campaign for the prevention of syphilis?

Today syphilis is the greatest public health problem confronting the nation. It is more than a state problem. It matters not how bitterly we may fight it in Virginia, it may continue to come to us from beyond our borders. Therefore, it becomes a national problem. While we do not always like paternalism on the part of the Federal government, we must admit that we must have Federal help in this matter, if we hope to succeed

I should like to make this proposition to the Society, that we make this meeting of the Medical Society of Virginia a dedication to the cause of beginning a campaign to overcome syphilis in the State of Virginia.

Dr. D. C. Smith, *University*, closing the discussion: I should like to announce that the American Social Hygiene Association has a very excellent exhibit here. This will be found in the scientific exhibits in the first room on the right. This exhibit is very instructive. I know Dr. Clark, who is with the exhibit, would be glad to have every member see it.

CANCER OF THE STOMACH, WITH SPECIAL REFERENCE TO ITS INCIDENCE, DIAGNOSIS AND TREATMENT.*

By J. SHELTON HORSLEY, M. D., Richmond, Va.
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Incidence

The last census reports available for the estimation of the mortality from cancer in the United States show that in the year 1927 there were 103,578 deaths from cancer in the Registration Area of the United States. Of these, 36,879 were from cancer of the stomach and liver. As primary cancer of the liver is very rare, and as deaths are listed according to the original site of the cancer, it seems probable that at least 35,000 are from cancer that originated in the stomach.

In Virginia there were during 1929, 1,686 deaths from cancer as against 1,567 in 1927; with 560 deaths from cancer of the liver and stomach in 1929 and 516 in 1927, probably more than 90 per cent of this combination being from cancer of the stomach.

Deaths when sudden and spectacular attract much attention—as from the explosion of an airship, a railway collision, an automobile accident or the sinking of a ship. But the fact that more than 100,000 persons perish quietly in the United States every year from cancer (one-third of them from cancer of the stomach) causes but little comment. Cancer of the stomach is responsible for far more deaths than cancer of any other single organ. When we consider that malignant tumors from all other regions, such as the colon, rectum, pancreas, kidneys, bladder, prostate, breast, ovaries, uterus, mouth, neck, brain, skin, muscle, and bone make up the balance which is scarcely two-thirds of the total mortality from cancer, we can readily see how seriously cancer of the stomach should be considered.

Causes of Death From Gastric Cancer

In a recent article by Saltzstein and Sandweiss,[2] of Detroit, there is an analysis of 365 consecutive deaths from cancer of the stomach collected from the Cancer Division of the Department of Health of Detroit. It includes all the deaths registered as due to cancer of the stomach from a population of 1,730,000 during one and a half years. Of this number, only twenty-eight, or 7.7 per cent, had resections of the stomach for cancer, and of these only eleven, or about 3 per cent, recovered from the operation. It is obvious that many of this small group operated upon came late and were desperate risks.

Dr. Margaret Warwick,[5] in a report of 176 necropsies on cancer of the stomach from the Department of Pathology of the University of Minnesota, extending over a period of twenty years, shows that the deaths from cancer of the stomach occupy a total of about 30 per cent of all the Department's necropsies on cancer. Her report brings out many interesting facts. The age varied from thirty-two to eighty-two years, but the average age was fifty-nine years. The largest number of deaths in any decade (35 per cent) occurred in the sixth decade, and the next largest number (29 per cent) in the fifth decade. Cancer of the stomach was found much more frequently in men than in women, and was often located in the pylorus (42.2 per cent). It is interesting to know, too, that in only 43.4 per cent of the cases of this series was ulceration present, and of this number 51 per cent showed perforation, and in about one-third of these the perforation was plugged. In two-thirds of the cases with perforation death from peritonitis occurred.

*Read before the sixty-first annual meeting of the Medical Society of Virginia, at Norfolk, October 21-23, 1930.

The most frequent fatal complication was peritonitis. There was no emaciation in about 18 per cent of the cases. In 23 per cent, or 40 of the fatal cases, there was no metastasis, the growth at the time of death being confined entirely to the stomach. In many of these cases the death was due to peritonitis.

This brings up the subject from a new angle. The fact that of this series of 176 deaths from gastric cancer 23 per cent (40) of the cases had no metastasis, the growth being confined to the stomach at the time of death, and yet in the larger series of Saltzstein and Sandweiss (365 cases) resection was done on only 7.7 per cent (28 cases), shows that many opportunities for cure must have been missed. In some of the 23 per cent the cancer was probably located in the inaccessible cardiac regions, but it is more common at the accessible pylorus than elsewhere.

Cancer of the stomach presents variable forms. We are often accustomed to think of it as an ulcerating necrotic mass and yet the statistics of Dr. Warwick show that in only 43.4 per cent of these necropsies was ulceration present.

Etiology

The cause of cancer is a subject of which the limit of time will not permit us to discuss except to say the theory that seems more probable now than any other is that cancer is not due to a parasite or any micro-organism, but that it springs from a derangement of one or more local cells in the tissues. This derangement results in a freeing of the cells from the normal control of the surrounding tissues, which abolishes the restraint of going through the normal biologic processes of growth. These cells after acquiring this attribute of unrestrained growth can transmit it to their own offspring. The fact that cancer in mice can be produced in the laboratory by frequent painting of the mice with tar, and that the resulting cancer will metastasize and can be transplanted, shows that same irritant is primarily responsible for the neoplasm. It may be, of course, that some micro-organisms act indirectly by causing irritation, but that cancer is primarily due to bacteria or a microscopic parasite in the same sense that typhoid or tuberculosis is, is hardly tenable.

Certain tissues of the body are less liable to cancer than others. The cause of this comparative immunity is not known, but very obviously exists. It may be due to the natural stability of the tissue. I have never seen a primary cancer of the palms of the hands or the soles of the feet, yet cancer of the mouth, tongue and lips is common. Cancer of the stomach is also common, and, as has been stated, is one of the greatest causes of mortality from cancer, and yet cancer of the duodenum is extremely rare, almost a surgical curiosity. It is necessary, then, to have some cause besides irritation.

So far as we know from observable regions of the body, cancer never springs directly from normal tissue. If this holds in the face, tongue, rectum or uterus that can be observed, it seems highly probable that the same general rule should obtain in the stomach which is difficult of direct inspection. It would be an anomaly if the irritation in the stomach caused by peptic ulcer did not occasionally at least produce cancer, whereas irritations of the mouth and lip of people of the same age are known to be one of the chief causes of cancer. Ulcer of the stomach is much less frequent than ulcer of the duodenum—in the ratio of probably about one to four,—but the duodenum, like the palms of the hands, seems almost immune to cancer. In fact, the number of cases of peptic ulcer of the stomach corresponds in a general way to the number of cases of cancer of the stomach. Much stress has been laid upon the size of the ulcer of the stomach, the large ulcers being more likely to be cancerous than the smaller ones. My own experience, however, shows that while this in a general way is true, there are many exceptions to it. I have had several cases of large ulcers of the stomach, five or more centimeters in diameter, that were benign, and one case at least of a small ulcer of the stomach, not more than 1.5 cm. in diameter, that proved to be malignant. No set rule can be made for this, but the marked tendency is for the larger gastric ulcers to be cancerous.

Symptoms

The symptoms of cancer of the stomach are not typical. The most important thing to bear in mind is that there is no typical history or symptom of cancer of the stomach. It is more frequent in men. In Saltzstein and Sandweiss' analysis of 365 cases it was found that about one-fourth of all the cases gave a history of prolonged attacks of stomach trouble, and

about two-thirds of this number gave a fairly typical clinical history of peptic ulcer. It must be recalled, however, that gastric peptic ulcer is not infrequently found without a so-called typical history. The large gastric ulcers may cause more or less discomfort with no connection with food relief, and sometimes the first symptom is hemorrhage. Hemorrhage is a rather infrequent symptom in cancer of the stomach, probably less than 2 per cent (1.4 per cent in Saltzstein and Sandweiss' cases). When it is considered that, according to Dr. Warwick, only 43 per cent of cancers of the stomach showed ulceration, we can see that hemorrhage is by no means as common in cancer of the stomach as it is usually supposed to be.

The examination of the gastric contents in cancer of the stomach usually shows a low hydrochloric acid content or, not infrequently, a complete absence of hydrochloric acid. This, however, is by no means a universal finding, as early gastric cancer may occur with normal hydrochloric acid in the gastric juice. Blood and lactic acid in the gastric juice may be suggestive, but should not be depended upon too much.

In about three-fourths of the cases, there are no preliminary symptoms, but the cancer arises in otherwise apparently healthy individuals and goes on steadily toward death. There are, however, many cases of antecedent long drawn out histories of stomach trouble extending over periods of years. In one of my patients whom I operated upon at the age of seventy years, there was intermittent stomach trouble with some food relief for forty years, and at operation there was cancer of the pylorus, not very advanced, but producing partial obstruction.

In the three-fourths of the cases of gastric cancer in which there are no such preliminary symptoms, the situation is more serious because by the time symptoms from the cancer have arisen the growth may be well advanced. In many of these instances the cancer is in the so-called silent areas of the stomach. Physiologists have shown that the lesser curvature contains tissue acting somewhat like the neuromuscular tissue of the heart, and initiating peristalsis; an ulcer or lesion in this region usually produces symptoms because of the spasm and interference with the motor function of the stomach. Of course, at the pylorus obstruction occurs early. In many cancers of the stomach (about 42 per cent according to Warwick) the tumor is at the pylorus and will cause early symptoms of obstruction. Because three-fourths of gastric cancers arise in apparently healthy persons without preliminary symptoms and march on to inevitable death unless the cancer is removed, it does not mean that there was not a preliminary lesion. As has been mentioned before, cancer elsewhere in the body always starts from abnormal tissue, and it is reasonable to expect this to be true in the stomach. Necropsies and roentgenologic examinations not infrequently show ulcers of the stomach or healed ulcers that have given no symptoms. Lesions along the greater curvature or in the cardiac portion of the stomach may exist without causing any symptoms unless perforation or hemorrhage occurs, or unless the growth is so large as to produce obstruction. In a case of my own (Mrs. S.), a cancer of the colon was removed which only gave symptoms for a few months, though the growth must have been present much longer, and there were several benign adenomas in the region of the cancer. It seems highly probable, then, that some lesion such as a symptomless adenoma or ulcer has been the preceding cause of the cancer of the stomach that arises without preliminary symptoms. It is well known that in the colon and rectum benign adenomas and papillomas that have existed for years often degenerate into cancer.

According to Saltzstein and Sandweiss, of 213 patients who died of cancer of the stomach when the onset was from previous good health, in seventy-four the first symptom was "indigestion," pain in the epigastrium in twenty-one, a history of ulcer in twenty, vomiting in fifteen, gastric hemorrhage in three, difficulty in swallowing in five, gnawing sensation in the epigastrium in three, distended abdomen in three, and fullness in the stomach in three. Of the atypical symptoms there was loss of weight and weakness in thirty-seven, loss of appetite in fourteen, atypical pain (not in upper part of abdomen) in eleven, anemia in two and diarrhea in two. It is readily seen, then, that there is no typical symptom for cancer of the stomach, either when it results from the changing of a gastric ulcer into cancer or when it arises in individuals who are otherwise apparently healthy. It is significant to note, however, that in a long history of stomach complaint when the symptoms change

and become constant instead of intermittent, or when the appetite begins to disappear and the patient loses weight, or when vomiting of blood occurs, there often seems to be a transition from a benign condition into malignancy. I am trying to avoid the use of emaciation, palpable tumor, vomiting blood and cachexia as symptoms of gastric cancer, because these are often the terminal stages and too frequently the patient with these symptoms may have gone beyond hope. Even in such patients, however, there may occasionally be some chance for cure or at least palliation by operation. If we recall the fact that, according to Warwick, in forty, or 23 per cent, of necropsies for cancer of the stomach the cancer was limited to the stomach itself, it appears possible to have a palpable tumor, hemorrhage and some cachexia while the cancer is still confined to the stomach. This, of course, does not mean that we should wait for terminal symptoms, but it does mean that there are some apparently advanced cases that may occasionally be saved. Palpable lymph nodes in the lower portion of the neck, especially on the left side, referred to as Virchow's glands, in the presence of cancer of the stomach indicate that there are metastases through the chest and in the supraclavicular region. Such cases, of course, are obviously inoperable from any standpoint of cure, and this may be one of the terminal symptoms. When the cancer of the stomach is of very great malignancy, metastases may occur in the lymph nodes of the neck before the lesion in the stomach has progressed very far.

The most dependable means of diagnosis of cancer of the stomach is a roentgenologic examination by a competent roentgenologist. Nothing requires more care and responsibility than the examination of the stomach by X-ray. While pictures of fractures can be easily taken, a competent roentgenologic examination of the gastro-intestinal tract requires great skill. I have not infrequently had X-ray plates referred to me with a diagnosis of cancer of the stomach when the defect was due to the pressure of the spine upon the plates while the patient was lying prone. One who does much gastric surgery will be able to recognize this type of X-ray plates rather easily and save the patient an unnecessary operation. Fluoroscopic examination is as important as the plates, and should be interpreted by a competent roentgenologist. In the hands of a well trained roentgenologist, a diagnosis of cancer of the stomach can be made rather positively in about 90 per cent of the cases; on account of the location of the lesion and for other reasons in about 10 per cent the diagnosis cannot be made even by the best roentgenologist.

The chief thing that I wish to impress is that if a patient, particularly a man, begins having symptoms of so-called indigestion or stomach trouble, after thirty-five years of age, and it cannot be cleared up by ordinary simple remedies and regulation of diet in two or three weeks, the patient should be referred to a competent roentgenologist for a thorough examination of the gastro-intestinal tract. If an ulcer of the duodenum is found and is in an early stage, it should be treated medically for at least several months, or even longer if there is no complication. Many peptic ulcers of the duodenum can be cured by careful medical treatment. It is only when they resist medical treatment and recur, or when there is perforation, hemorrhage or obstruction, that operation is indicated. In the persistent types, however, or when the ulcer is very large, operation is the best treatment.

In an ulcer of the stomach the problem is different. Ulcers of the stomach are more difficult to cure by medical treatment and, in addition to that, the tendency for ulcers of the stomach to degenerate into cancer, which occurs to almost no extent in ulcers of the duodenum, is a very serious factor. If the ulcer of the stomach has been giving symptoms for only a few weeks, and can be treated satisfactorily and appears to be healing after six to eight weeks, the medical treatment may be continued longer, but if it is not healing it should be operated upon. W. J. M. Scott[3] has called attention to the fact that even X-ray examinations at intervals of a few weeks do not always show the actual facts, because sometimes the infiltration of a small lesion may fill out a niche, when as a matter of fact the cancer is still progressing. He has reported cases with gastric symptoms five to ten years and negative X-ray findings for cancer, and yet with cancer shown at operation.

Treatment

There is only one treatment for cancer of the stomach, and that is excision. The sooner it is done the better. With modern technic and careful preparation, and with the choice

of anesthetics, frequently using either spinal or local, the mortality can be greatly diminished. The employment of the continuous intravenous injection of dextrose in Ringer's solution is very helpful, both as a temporary measure during the operation to prevent shock and following the operation to rest the stomach.

Gastroenterostomy in gastric cancer is rarely justified. A carefully done partial gastrectomy will carry almost as low a mortality. If the cancer is so extensive that it cannot be resected, usually gastroenterostomy is contraindicated. There may be, however, occasional instances in which this operation is indicated. Saltzstein and Sandweiss state that "It is being appreciated lately that gastric resection, if at all feasible, is a better palliative procedure than gastroenterostomy; patients are more comfortable following it, and patients with nodules in the liver have lived three years after gastrectomy for cancer."

For the past seven years I have been using a technic which is a modification of the Billroth I partial gastrectomy. This consists in uniting the lesser curvature of the stomach to the upper border of the duodenum, flaring open the anterior wall of the duodenum to prevent obstruction, which was a great objection to the original Billroth I, and folding in the redundant portion of the stomach along the greater curvature. In this way the so-called "deadly triangle" of Billroth is avoided. Occasionally, if the stomach is small, the duodenum may be flared open enough to make an end-to-end anastomosis.

When the cancer is too extensive for partial gastrectomy, a total gastrectomy may sometimes be done. In the case of Mrs. L. J., this operation was performed and the jejunum was united to the esophagus. Unfortunately in lifting up the stomach much of its contents regurgitated into the esophagus and when the clamp was removed from the esophagus after detaching the stomach the upper portion of the abdominal cavity was contaminated by the reflux from the esophagus. Though the peritoneum had been packed off with gauze, infection resulted and the patient died five days after operation. Examination of the stomach showed the cancer almost throughout the stomach, though necropsy did not reveal evidences of malignancy elsewhere.

In one patient, Mrs. B. H. H., a palpable tumor in the upper abdomen had been noticed by her for more than a year before she would submit to operation. A partial gastrectomy done according to the technic described resulted in immediate recovery. The patient lived in comfort for nearly three years, and died of metastases in the chest and axilla with apparently no recurrence in the stomach. This shows that cases with palpable tumors are not necessarily inoperable.

In 1928 I published an article[1] on gastric cancer in the aged, reporting five patients over seventy years of age on whom this partial gastrectomy was done. In two of them part of the colon had to be resected. The operative mortality was one, the patient dying as a result of resection of the colon. The oldest patient was seventy-seven years of age, and died nine months after operation of nephritis. No necropsy was held, but there was no evidence of recurrence of the cancer. The other patients lived comfortably from six months to two years, developing metastases usually in the liver. In spite of the fact that all of these cases were far advanced, two of them necessitating resection of the colon, and all of them over seventy years of age, the results in prolonging life and establishing comfort may be considered as not unsatisfactory.

I have had one patient, Mrs. L. E. H., seventy years of age who had symptoms for fifteen years. The symptoms were increased before entering the hospital. A partial gastrectomy was done and a rather small ulcer was found along the lesser curvature of the stomach. It seemed to have been irritated and caused marked spasm. On microscopic examination of the lesion one area was found in which there were two definite acini of cancer. This patient has been in excellent health since operation nearly two years ago (December 10, 1928) and will probably make a permanent cure. It is in patients such as this in whom the malignant lesion is found in the early stages that the best results are obtained.

Summary and Conclusion

Saltzstein and Sandweiss have shown that in Detroit, with its abundant hospitals, only 7.7 per cent of patients with gastric cancer have a partial gastrectomy. It seems probable that the percentage is even lower in Virginia. As partial gastrectomy is the only known cure for cancer of the stomach, this means that only about one patient in twelve with cancer of the

stomach is given any chance for a cure. Partial gastrectomy in early gastric cancer should give cures comparable to those after the radical operation for cancer of the breast, and even in the more advanced cases it often brings relief and prolongation of life. While it is necessary to study the early stages of any unusual gastric disorder in patients, particularly men, over thirty-five years of age, it is also well to remember that about one-fourth of the cases of gastric cancer are subsequent to some other gastric lesion giving symptoms for a long time (usually ulcer), and practically all of these cases should be recognized and operated upon in the early stages. In the other 75 per cent of cases, prompt attention to the first symptoms and a partial gastrectomy, as soon as the diagnosis of gastric cancer is made, will often result in the prolongation of life and sometimes in cure, whereas otherwise there is no hope.

BIBLIOGRAPHY

1. Horsley, J. Shelton. Cancer of the Stomach in Patients Over Seventy Years of Age. *Ann. Surg.*, pp. 554-564, September, 1928.
2. Saltzstein, Harry C., and Sandweiss, David J. The Problem of Cancer of the Stomach. *Arch. Surg.*, pp. 113-127, July, 1930.
3. Scott, W. J. M. The Relationship of Carcinoma and Callous Gastric Ulcer. *Surg., Gynec. & Obstet.*, pp. 199-212, February, 1928.
4. Virginia Bureau of Vital Statistics, Annual Report. *Virginia Health Bulletin*, Vol. xxii, January, 1930.
5. Warwick, Margaret. Analysis of One Hundred and Seventy-six Cases of Carcinoma of the Stomach Submitted to Autopsy. *Ann. Surg.*, pp. 216-226, August, 1928.

NEOPLASMS OF THE URACHUS: REPORT OF TWO CASES OF CARCINOMA.*

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and
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In 1868, Hugh and Jacquin[1] described the first recorded case of a solid tumor of the urachus. Their case was the cause of considerable controversy, such authorities as Virchow, Muller, and Laennec, being unable to agree as to the nature of the tumor. From the description of the microscopic observations, it was in all probability a sarcoma. Since the presentation of this case, neoplasm of the urachus had been recognized, but its importance has not been fully appreciated. Smith,[2] 1897, made the statement that such cases have a pathological rather than a practical interest. Although neoplasms of the urachus are rare, they are by no means so infrequently encountered as to justify such an opinion.

Rankin and Parker,[3] 1926, reported the following four cases from the Mayo Clinic: One simple fibroma, one adenoma, one squamous cell epithelioma and one adenocarcinoma. In the same year, Brady,[4] inspired by a case of his own, searched the literature on the subject, and in 1927 published, with his own case, an excellent review of nineteen additional cases. His case, and one other were benign. Of the remaining eighteen, seven were sarcomata and eleven carcinomata.

To repeat in detail the cases described in these two splendid publications would be a waste of time. There are, however, reports of more recent cases worthy of mention and two of our own (Payne's) which we wish to present in this paper.

In August, 1927, Long[5] reported the following case of a dermoid cyst of the urachus. "The patient, a man thirty-four years of age was admitted to the hospital on November 18, 1926. His previous history had no bearing on the present condition. For the past five months his work has been such that it was necessary for him to crank a gasoline motor and he frequently leaned on or grasped the fly wheel to stop the motor. Two weeks ago he did this with sufficient violence to hurt himself. Four days later he had pain in the region of the stomach and five days afterwards felt something give way in his epigastrium; and had a sensation of secretion coming from his navel. He noticed a yellowish-white discharge and was tender on pressure in the region of the umbilicus. Three days before entering the hospital he noticed a red mass protruding from the navel. The discharge continued and he was also conscious of some pain and soreness in this region.

"Examination revealed a man of rather large frame, who was not acutely ill. The umbilicus was everted, red and discharging a yellowish-white purulent material. A probe introduced into the sinus passed directly downward for about four inches and met an obstruction at that point. On palpation a hard definite globular mass could be felt just below the umbilicus. Culture made from the secretion was negative. A provisional diagnosis of infected cyst, probably of a dermoid character, was made.

*Read at the sixty-first annual meeting of the Medical Society of Virginia, in Norfolk, October 21-23, 1930.

"At operation on November 20, 1926, a thick walled, cystic mass was found lying between the recti-muscles and the peritoneum, continuous above with the round ligament of the liver and below with a non-patent urachus. This mass was removed intact, together with adherent peritoneum and omentum. The cavity of the tumor contained a concretion and three short hairs, and communicated with the outside through the umbilicus."

Greig[6] reported a case of sarcoma of the urachus in a woman thirty years of age upon whom he had operated seven years previously. A preoperative diagnosis had been made by her physician of uterine and ovarian affection. "Accepting this as a probable diagnosis, a few days later, through a median infra-umbilical incision the abdomen was opened cephalad to the superior pole of the tumor which was found to be extraperitoneal. The opportunity showed the pelvic organs to be normal and the peritoneal incision was closed.

"The tumor was situated in the extraperitoneal aveolar tissue deep to the fascia transversalis. It was solid and soft, and encapsulated by a thin membrane. It had no attachment to the umbilicus and was easily enucleated and at its inferior extremity the delicate capsule concentrated to a fibrous strand which passed to the urinary bladder and was divided between ligatures well away from the tumor. * * *

"The tumor on section was of a uniform grayish-yellow color, homogeneous in consistency except here and there where degeneration had formed small irregular cavities. The capsule was delicate and thin and did not apparently supply septa to the tumor which microscopic examination showed to be a small spindle cell sarcoma."

This case is particularly interesting in view of the fact that at the end of seven years after operation the patient was in good general health and there was no evidence of any metastasis or local recurrence.

Adam[7] reported a case of carcinoma of the urachus in a woman thirty-two years of age. Since birth she had noticed a small swelling in the region of her navel which recently had been growing. Six months before she reported to Dr. Adam she had noticed a nodule in the abdomen below the one mentioned above. When first noticed it was about the size of a hazel nut and was painless. Since then it had grown rapidly and had become very red. An opening was found in the center of the mass from which drained small ragged particles of the growth. On examination midway between the umbilicus and the symphysis was found a mass the size of a man's fist just under the skin; which was soft and reddish in color. In the region of the navel was found a soft transparent bluish colored protrusion.

On November 10, 1927, the patient was operated upon. An incision extending from the symphysis to just above the umbilicus was made. The tumor had not apparently penetrated the peritoneum. Both tumors were removed with surrounding healthy tissue and the abdominal wall closed. The peritoneum was not opened.

Extending from the umbilicus in the direction of the symphysis was a scar like band of tissue to which the tumor in the abdominal wall was apparently attached. The band became broader as it extended downward.

On histologic examination, sections from the lower tumor presented the picture of a very cellular growth with poorly differentiated cells. Scattered here and there were nests of cells surrounded by fibrous tissue. Near the center of the tumor the nests were more numerous and larger than at the periphery. Near the opening into the tumor were masses of wart-like formations. In the nests were found the tumor cells, which were large and irregular in shape and presented sharp outlines. The nuclei were very large and oval shaped. The cells around the periphery of the nests were very numerous and often hyperchromatic. Cell divisions were also quite frequently seen.

The protrusion near the navel was composed of scar-like fibrous tissue, the surface of which was covered with endothelial cells. Between the hyalin like bands of cells was found lymphocytic infiltration and cells filled with pigment. In the wart-like area of this tumor were found likewise large, many sided tumor cells. Both tumors were carcinomatous.

The protrusion of the navel was apparently an umbilical hernia and the small tumor in the region of the umbilicus secondary to the larger one in the abdominal wall.

Our cases (Payne's) are both examples of carcinoma of the urachus, Case I representing carcinoma developing in the walls of a patent urachus, and Case II a solid tumor of the upper portion of a non-patent urachus.

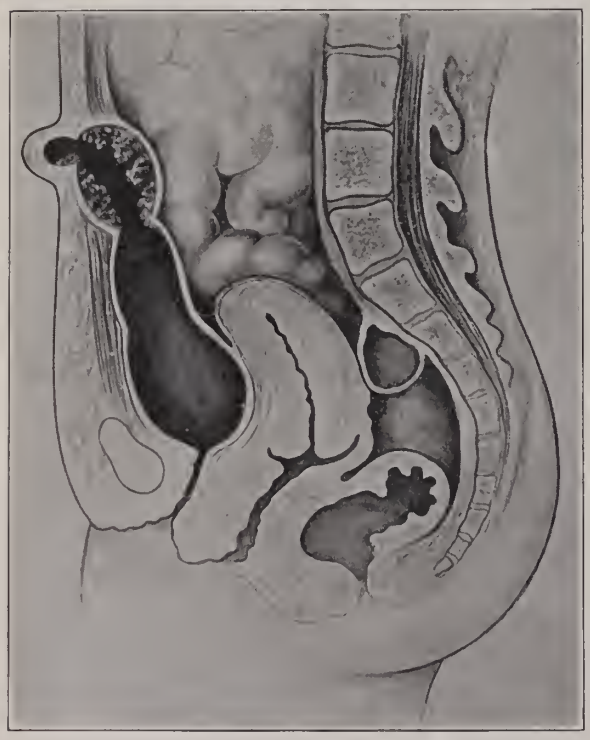
Case I.—The patient, a negro woman forty-eight years of age, came to St. Vincent's Hos-

pital January 17, 1926, complaining of swelling and tenderness in the region of the navel. There was nothing of significance in the family history or the past medical history.

About five weeks prior to her admission the patient first noticed a hard swelling in the region of the umbilicus. The mass gradually increased in size. She did not complain of any symptoms other than tenderness around the navel. Cardiac respiratory and gastro-intestinal histories were negative. The genito-urinary history was negative except for malodorous urine.

Physical examination revealed a well nourished and well developed middle aged woman apparently in good health. The umbilicus was protruding, the umbilical ring considerably enlarged and the tissues around the umbilicus indurated. There was no discharge from the navel. Small definitely palpable glands were found in both inguinal regions.

Laboratory findings were as follows: The urine was loaded with albumen and in it were found many erythrocytes and epithelial cells and an occasional pus cell. The leucocyte count showed 12,000 white cells, 80 per cent of which were polymorphonuclear leucocytes.



No. I.—Diagrammatic sketch drawn from specimen removed showing the malignant lesion in the patent urachus and its direct communication with the bladder.

Because of the urinary findings, a cystoscopic examination was performed and the patient was found to have a diverticulum of the bladder extending up in the direction of the umbilicus. (Figure I.) A diagnosis was made of patent urachus, probably malignant and surgical treatment was advised.

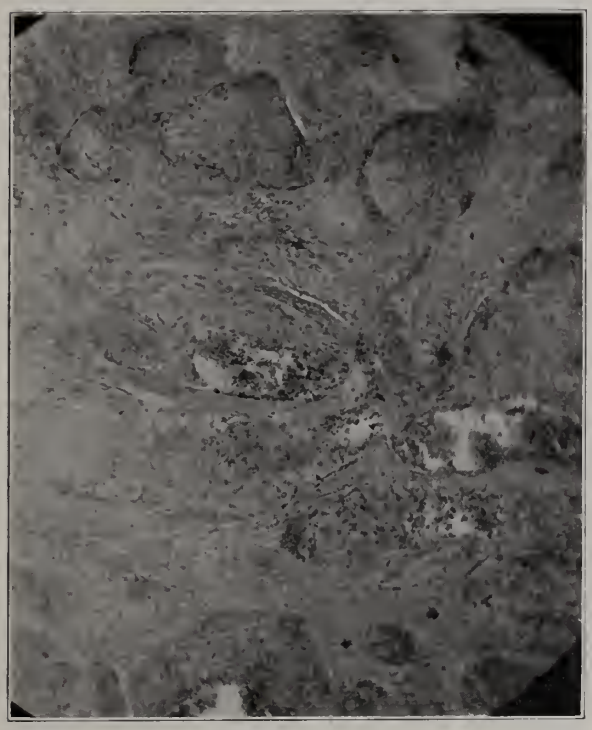
On February 20, 1926, the patient was operated upon. The umbilicus was removed intact with the overlying inflammatory tissue and a communicating patent urachus which was three and one-half inches in circumference. The opening of the vertex of the bladder was closed and a peritoneal flap was sutured over it. One cigarette drain was placed behind the uterus, and a rubber tube in the space of Retzius. The abdomen was closed in the usual manner. An indwelling catheter was left in the bladder.

Microscopic examination of sections from the tumor revealed a rather rapidly growing carcinoma with many large poorly differentiated cells. (Figure II.) There were masses

No. II.—High power field of tissues from case No. I, showing the large undifferentiated cancer cells.

of cancer cells surrounded by rather poorly developed strands of fibrous tissue. (Figure III.)

The patient recovered following the operation and remained well for a period of nine months. At that time she began to lose weight and complained of pain in the abdomen. On



No. III.—Lower power field through growth from case No. I. showing the large nests of cancer cells.

examination she found to have a generalized glandular enlargement. The abdomen was somewhat distended and contained a large palpable mass. Two months later she died with general carcinomatosis.

Case II.—In October, 1929, the patient, a man forty-nine years of age, was admitted to St. Vincent's Hospital, complaining of pain in the region of the umbilicus and the left kidney. The onset of pain followed a fall two months previously. There was nothing of significance in the family history or the past medical history. No history of patent urachus was elicited. He had had the usual childhood diseases but otherwise had enjoyed good health. Following the onset of this illness he had suffered some inconvenience from nocturia and had occasional mild pain over the left kidney. Otherwise, the urinary history was normal. Investigation of the genito-urinary tract was negative.

Physical examination revealed a slender middle aged man who appeared to be in good health. The skin was clear, showing no evidence of jaundice, eruptions or scars. All reflexes were normal. There was a moderate glandular enlargement involving the epitrochlears, the axillary and inguinal glands. Examination of the lungs and heart was negative.

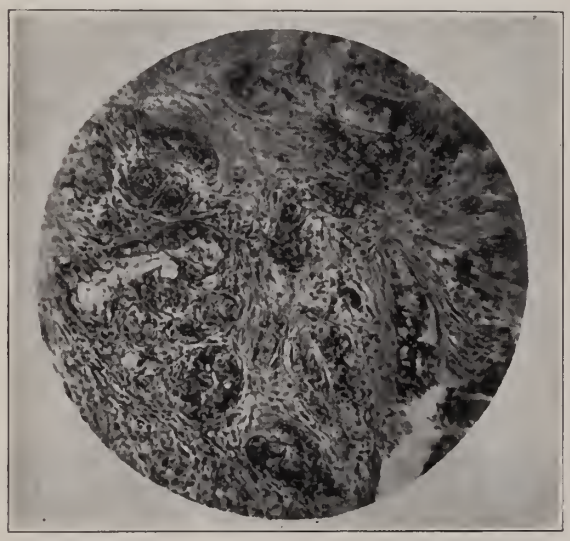
The abdomen was flat, though there was considerable resistance on palpation. The patient complained of pain on pressure around the umbilicus. The skin around the umbilicus was red and brawny. No definite abdominal mass was detected. The blood Wassermann, leucocyte and erythrocyte counts were normal. The gastro-intestinal tract was thoroughly investigated, in search of a primary lesion. All examinations, however, were negative.

On October 11, 1929, the patient was operated upon. A provisional diagnosis having been made of malignancy of the urachus with metastasis to the umbilicus. A wide excision of the umbilicus with the upper half of the urachus was performed. Part of the recti muscles and the parietal peritoneum were removed. On exploration, the stomach, gallbladder, liver, large and small intestines were all found to be negative. One large retroperitoneal gland was found and removed from between the leaves of the mesentery.

Pathological examination of the specimen revealed a small rounded tumor just below the umbilicus in the upper half of the urachus. On section, the cut surface appeared grayish

No. IV.—Lower power field showing the strata like arrangement of the cancer cells in case No. II, and the commonly found band of fibrous tissue running between the strata of cancer cells.

and translucent. The tumor was apparently well outlined. Fresh sections showed rows of cancer cells separated by bands of fibrous tissue. (Figure IV.) Fixed sections were also made. In some fields the cells were grouped in an alveolar arrangement. One nodule from the mesentery showed dilated ducts lined with cells of the type found in mucous glands. Throughout all sections was noted a diffuse inflammatory reaction. A pathological diagnosis was made of carcinoma of the urachus with metastasis to the umbilicus and retroperitoneal glands.



No. V.—High power field from case No. II, showing the large irregular and large undifferentiated malignant cells.

The patient recovered following a rather stormy convalescence. We have not been successful in getting accurate follow-up notes on this case, but have been informed that he died about ten months after the operation was performed.

Conclusions

One hardly feels justified in drawing definite conclusions from so small a number of cases. However, the following impressions are derived from a study of the cases reviewed by Brady, Rankin, and Parker, and from those cases which we have presented.

1. Neoplasm of the urachus is more common than has been realized in the past. The physician should, therefore, bear in mind the possibility that he is dealing with such a condition whenever a patient is found to have a mass between the symphysis pubis and the umbilicus. Particularly is this true when the patient complains of bladder symptoms or a discharge from the navel.

2. Although the average patient with neoplasm of the urachus is between forty and fifty years of age, it has been reported in the very young and in the aged.

3. Males are affected more commonly than females.

4. Neoplasm of the urachus may develop in the walls of urachal cysts of long standing or in a patent urachus. More frequently, however, there is no evidence of the urachus having remained patent.

5. Urachal neoplasms may be benign or malignant. The latter are the most common, and may be sarcomata or carcinomata. Of the malignant growths, carcinomata is more frequently found. Our cases proved to be carcinomata.

6. Although malignant growths may occur in any part of the urachus, they are most frequently found in the lower portion. If the bladder has become involved there is usually a history of dysuria, polyuria, and hematuria.

7. Benign tumors of the urachus may be removed without opening the peritoneum. In most malignant cases, however, the abdominal wall and parietal peritoneum are involved and a wide excision is necessary, removing part of the recti muscles, peritoneum and, if the growth is in the lower portion, the vertex of the bladder.

Bibliography

1. Hugh and Jacquin: Quoting Brady.
2. Smith, Greig: Abdominal Surgery, 1897, Vol. 2.
3. Rankin, F., and Parker, B.: Tumors of the Urachus. *Sur. Gyn. & Obst.* 42:19-27, July, '27.
4. Brady, L.: Solid Tumors of the Urachus. *Arch. Surg.* 14:46-62, January, '27.
5. Long, J. H.: Dermoid Cyst of the Urachus. *S. Clin. North America.* 7:943-945, August, '27.
6. Greig, D. M.: Sarcoma of the Urachus. *Edinburgh M. J.* 34:425-426, July, '27.
7. Adam, L.: Zwei Interresante Bachwandgeschwulste. *Zentralbe. f. Chiur.* 56:1159-1164, August, '27.

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Discussion

Dr. Carrington Williams, Richmond: Dr. Payne has presented two very unusual and extremely interesting cases. If we recall the embryology of this region, we remember that entering the umbilical cord in the embryo are three blood vessels, and the urachus, which gives origin to the bladder, and that all these structures should be obliterated about the third or fourth month. When we think of congenital defects of other parts of the body, such as harelips and cysts and other epithelial deformities, it seems rather remarkable that we do not see these more often. The urachus may be partially obliterated in fetal life or may persist intact, as Dr. Payne mentioned in the

early part of this paper, where the little boy was able to urinate through the urethra and through the navel at the same time. I have had one case, a perfectly benign cyst of the urachus, occurring in a woman. The cyst was about twelve inches in diameter. It was thought to be of ovarian origin. On attempting to open the abdomen we got directly into the cyst. There was so much inflammation of the wall of the cyst that it was impossible to remove it. A microscopic section showed no epithelial tissue; I think it is reasonable to suppose it had been destroyed by the inflammation.

As Dr. Payne said, these things may occur a great deal more often than we realize. On the other hand, he has had only two cases and has opened a large number of abdomens. The remarkable thing, to me, is that we do not see it more often.

ACUTE PNEUMONITIS DUE TO INFECTION BY VINCENT'S ORGANISMS: REPORT OF THREE CASES.*

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Acute inflammation of the lung structures caused by the fusiform bacilli and spirochetes of Vincent is undoubtedly a much more common occurrence than is generally recognized. The condition presents features which definitely point to its nature, and the sputum diagnosis is so easy that there should be no difficulty in arriving at the proper conclusion. It should also be recognized that subacute and chronic infections of this type occur, and spontaneous recovery must be frequent.

A considerable amount of literature has accumulated on this subject, but apparently it has not received the attention which its importance deserves. Rona,[1] in Germany, and Castellani[2] were among the earliest writers on the disease. Both published detailed case reports of the condition. Kline[3] and his associates have written extensively on the subject. Jackson[4] described the bronchoscopic findings in 1924 and found ulcerative lesions in the bronchi of the same character as those occurring in the oral cavity. Repeated direct application of 20 per cent solution of silver nitrate resulted in recovery of his cases.

In 1927, Smith[5] was able to collect 100 cases of bronchopulmonary spirochetosis. By animal experimentation he showed the pathogenicity of the Vincent's organisms for lung tissue. He listed brain abscess and empyema as relatively common serious complications, and he could find no report of recovery of the disease where it had existed six months or longer.

*Read at the sixty-first annual meeting of the Medical Society of Virginia, in Norfolk, October 21-23, 1930.

Case Reports

Case 1. Mr. F., age twenty-seven, white, single, salesman, was first seen February 10, 1930. He complained of cough, expectoration and weakness. His past history revealed no facts of interest except he had been subject to acute upper respiratory infections since he had influenza in 1919. He had a nasal septum operation and removal of the tonsils and adenoids in 1928.

The present illness began around January 1, 1930, with pharyngitis that gradually extended to his mouth, nose, and chest. His gums became so sensitive that he could only brush his teeth with a soft bristle brush. About January 15, the symptoms and inflammation of the upper respiratory tract had abated but he felt worse, his cough was aggravated and accompanied by moderate mucoid expectoration that at times was of wine jelly color and occasionally streaked with bright red blood. During this time he lost fourteen pounds in weight, became progressively weaker but continued to be up and for short periods would call on his customers.

Physical examination showed his general appearance poor, he appeared pale and there was distinct cyanosis. The gums were congested and severe pyorrhea was present. The pharynx was normal, but there was some congestion of the vocal cords with thickening of the left arytenoid area. Pulse 96 per minute, otherwise the cardiovascular system was normal. The right lung showed restricted expansion at the base with distant broncho-vesicular breathing, impaired resonance and sibilant and sonorous rales from the angle of the scapula to the base. The left lung was negative except for a few scattered bronchial rales over the base posteriorly. The remainder of the physical examination was negative.

Laboratory Examinations: Blood count, hemoglobin 80 per cent, erythrocyte count 4,250,000, leucocyte count 12,400, polymorphonuclear neutrophiles 70 per cent, small lymphocytes 20 per cent, large lymphocytes 10 per cent. Blood Wassermann reaction negative. Urine showed a faint trace of albumin, otherwise it was normal. The sputum showed many fusiform bacilli and spirilla of the Vincent's type and a smear from the gums contained these organisms in abundance. Roentgen ray examination of the chest disclosed some gen-

eralized bronchial thickening as the only deviation from normal.

Four hour temperature chart for three days showed average maximum elevation of 101°.

On February 14, he was given 0.6 gram of neo-arsphenamine intravenously. In twenty-four hours he was much improved and in seventy-two hours all symptoms had disappeared. The same dose of neo-arsphenamine was repeated on February 19. By March 1, he had gained ten pounds in weight and had returned to work. He reported that he was in excellent health three months later.

Case 2. Mr. K., age twenty-eight, white, medical student. The family and past history are not of significance. About December 1, 1929, the patient developed a severe cold but on account of home obstetrical duty he disregarded an elevation of temperature until this work was completed. When seen December 10, his temperature was 102°; he complained of chilly sensations, general aching and headache. There was considerable nasal discharge and redness of the throat. His condition appeared to be a rather severe upper respiratory infection of the influenzal type and he was ordered alkalies, salicylates, fluids freely, and to remain in bed. He showed no improvement under this treatment, his temperature going from 102° to 104° each afternoon. Marked night sweats developed and cough with moderate expectoration was present. About this time he began to complain of pain around the left lower ribs, especially on turning. Physical examination was negative except for some recession of the gums and moderate post-nasal discharge.

Laboratory Examinations: The urine showed a trace of albumen; otherwise it was normal. Leucocyte count 16,000. Differential count showed 68 per cent neutrophiles. Blood culture and agglutination tests for typhoid fever, paratyphoid B, typhus fever, undulant fever and tularemia were negative.

On December 30, his condition was about the same except that his features appeared rather pinched and there was more pain in the left chest. The temperature ran at about the same level and the marked sweating persisted. Examination of the chest showed some dulness and diminution in the intensity of the breath sounds at the left base and a few fine moist rales were heard over this area and in the right apex. A specimen of sputum showed a variety of organisms but none that could be considered of importance.

On January 2, 1930, the patient was admitted to the Johnston Willis Hospital. Roentgen ray examinations of the chest and sinuses were made and were reported essentially negative except for some restriction of the left diaphragm. The physical signs, however, were even more definite at this time with indication of consolidation over the left base posteriorly. The temperature range was from 99° in the mornings to 102° in the afternoons. The leucocyte count was 15,400, and the polymorphonuclear neutrophiles numbered 75 per cent. Blood culture and agglutination tests were negative as before. Sputum examination, made January 2, showed a variety of organisms but was negative for tubercle bacilli. Repetition of this examination, January 8, disclosed many spirochetes and fusiform bacilli of the Vincent's type. These organisms were also present in smears from the gums.

He was given 0.45 gm. neo-arsphenamine intravenously and in forty-eight hours there was a remarkable change in his condition. The temperature had dropped to a maximum of 100.5°, the sweating was much better, the physical signs in his chest were less marked, and generally he felt decidedly improved. He was given two more intravenous injections of neo-arsphenamine, one of 0.6 gm. and the other of 0.45 gm. at five day intervals. His progress was uneventful and on January 28 he returned to school in good condition. To date he has remained well.

Case 3. V. C., age fourteen, white, female. school girl. Patient lived in the same house with Case 2, with frequent opportunity for contagion. She was a rather nervous child but had been reasonably healthy. On February 6, 1930, she developed an acute upper respiratory infection with some fever which kept her out of school for a week, after which she seemed well until February 22. On that date, in the evening, she was found to have temperature of 102°. The next day it went to 104°, but there were no special symptoms except a slight non-productive cough.

When seen on February 24, temperature 104°, pulse 120 and respiration 22, but she did not appear particularly ill. The only abnormal physical changes were slight suppression of breath sounds and a few crepitant rales over the right lung base in the posterior

axillary line. The following day this area showed dulness to percussion, broncho-vesicular breathing, increased voice transmission and a moderate number of medium and fine moist rales. Her only symptoms then were slight bleeding from the right nostril and the non-productive cough. Leucocyte count 17,600 polymorphonuclear neutrophiles 77 per cent, lymphocytes 23 per cent. Urine negative except for a trace of albumin. No sputum could be obtained but a smear taken from the alveolar margins of the posterior teeth showed a moderate number of fusiform bacilli and an occasional spirochete of the Vincent type. These organisms were not seen in smears from the nasal passage.

In the afternoon of February 26, she was given 0.5 gram of sulpharsphenamin intramuscularly. The fever and chest findings rapidly disappeared and on March 3 she was entirely well and there has been no recurrence of the trouble. At no time was there clinical evidence of Vincent's angina in the oral structures.

Comment

It is impossible to state whether or not all of the respiratory infection in these cases reported was due to Vincent's organisms but it seems more probable that as a result of lowered resistance the lung infection developed from aspiration of organisms from the mouth and throat of Cases 1 and 2. In the third case there was no demonstrable primary infection and it is probable that the organisms were transmitted to her from her brother through the medium of coughing. It is interesting to speculate as to whether his strain developed a special affinity for lung tissue.

Acute or chronic Vincent's angina usually constitutes the primary focus for the lung infection. In the acute stage the oral infection may be manifest by a diffuse stomatitis with sensitive, spongy, bleeding gums, fetid breath and mild constitutional symptoms. The infection may become localized, especially on the tonsils or fauces, with the formation of a membrane which may be mistaken for that of diphtheria. Severe ulceration may occur and one of us has seen a fatal hemorrhage from one of these ulcers. In chronic Vincent's angina the organisms usually can be found in pockets about ill-fitting dental appliances or those produced by pyorrhea.

In smears the organisms are usually abundant. The fusiform bacilli stain readily with carbol fuchsin or methylene blue and are from 3 to 10 micra in length with a thickness at the center of 0.5 to 0.8 micron. They taper gradually towards the ends, terminating in blunt or sharp points. Not infrequently there is inequality in staining which gives them a banded appearance. The spirilla take the stain with more difficulty and for this reason it is well to apply it longer than the average. They are usually somewhat longer than the fusiform bacilli and show only a moderate number of undulations. Other organisms common to the mouth or respiratory tract are, of course, present in the smear.

The symptomatology and physical findings in these three cases are very similar and indicate an acute infection of the lung structure of localized type but there was no indication of pulmonary gangrene as has been described by others. It is rather surprising to find so much clinical evidence of lung consolidation without Roentgen ray evidence of this change. Schwarz[6] stated that Roentgen examination of the chest is useful since so commonly, negative results are obtained.

The essential feature in the differential diagnosis is the finding of numerous spirochetes and fusiform bacilli in the sputum. It is important to examine the sputum promptly as the organisms may autolize in a few hours. Careful search of almost any purulent sputum may show a few typical organisms, but a positive diagnosis is not justified unless they are abundant. It might be well at this point to emphasize the importance of careful examination of sputum whenever it is obtainable.

Treatment of these acute cases with one of the arsphenamines has been so satisfactory with us and in the experience of others that we may almost say that this constitutes the entire drug therapy. The response of the individual is truly spectacular and in doubtful cases there is little objection to giving the drug as a therapeutic test. The longer the disease exists the more lung destruction occurs. Where cavitation has developed, healing will be much slower and measures directed toward collapse of the cavity may be indicated.

References

1. Rona, S.: *Arch. f. Dermat. u. Syph.* 74:171, 1905.
2. Castellani, A.: *Lancet*, 1:1384, 1906.
3. Kline, B. S., and Blankenhorn, M. A.: *J. A.*

M. A., 81:719, 1923; — and Berger, S. S.: *J. A. M. A.*, 85:1452, 1925; *J. A. M. A.*, 90:2008, 1928; — and Berger, S. S.: *J. Am. Dent. A.*, 15:64, 1928; — and Berger, S. S.: *Arch. Surg.*, 18:481, 1929.
4. Jackson, C.: *J. A. M. A.*, 83:1845, 1924.
5. Smith, D. T.: *Am. Rev. Tuberc.*, 16:584, 1927.
6. Schwarz, Y.: *Lancet*, 2:1331, 1924.

Professional Building.

DISCUSSION

DR. C. L. HARRELL, Norfolk: I wish to thank Dr. Davis and Dr. Harper for bringing this subject to our attention. It is a very important one, especially to those of us who see many chest cases. I have seen a great many cases of Vincent's infection and wish to speak of them in three groups: Group 1, those with Vincent's Spirillum and fusiform bacilli found in the sputum, with very few chest signs; Group 2, the pneumonic type, with frank, definite consolidation; Group 3, abscess, with gangrene formation. Of type 1, I have seen more than the other two; this type of case responds very readily to arsenous intravenous treatment. Of type 2, I have seen only one case. This was definite pneumonia, with consolidation of one lung. I saw this case in consultation just a few hours before he died, which was about ten days from the time he was first taken. The sputum was teeming with Vincent's Spirillum. Of type 3, I have seen several cases; I have not had much success with these, though one seemed to respond to therapy.

McConnell brought out the fact that if you wish to find this organism you must examine the sputum within an hour or two, or it will disappear on standing.

He also found abdominal symptoms in a few cases. I have found abdominal symptoms in one case, I think.

To show the contagiousness of the disease, Smith reports where a man contracted the disease, with pulmonary symptoms, following three days' exposure to his wife. Two other cases were in physicians who had treated cases and developed it a few days after coming in contact. All responded very readily to intravenous injections of arsenicals.

I wish to thank Dr. Harper and Dr. Davis for their very interesting paper.

DR. HARPER, closing the discussion: The organisms found in Vincent's angina are usually two. There is a bacillus described by Dr. Davis which varies in length from five to ten microns and in width from .5 to .6 microns. The points may be blunt or tapered. The other is a type which shows fewer undulations than the pallida or the other spirochete. Both of these organisms are usually present. There seems to be a difference of opinion among pathologists as to whether the pallida is the transition stage of the fusiform bacillus. I rather think that it is.

In case No. 1 there were marked physical signs, but no evidence of infiltration or consolidation could be seen on X-ray plates. There was slight evidence of pleural thickening on this side, but nothing definite could be made out. This is not the first time that we have seen an X-ray report that did not tally with the physical findings, but it is a little disconcerting to the ones who saw this patient and felt sure he had some consolidation in the right lung that the roentgenologist should find nothing in his plate.

It is quite interesting to speculate on what happens to those patients that are untreated. Unquestionably, a great many of them must recover spontaneously, because I do not think they are recognized. I believe that the cases of lung gangrene we see (and, personally, I have never seen a case of lung gangrene recover), start as Vincent's angina of the lung. The pathologists thought that the organism there was saprophytic, and I positively believe these same organisms are responsible for gangrene in the lung.

We believe the essential factor in diagnosis is finding the organisms in large numbers in the sputum. It is perfectly true that you can get these organisms from practically any unclean mouth, but you do not get them from the sputum. If these patients are treated early with arsphenamin, the recovery is miraculous; it is just as miraculous as the disappearance of symptoms in diphtheria with the administration of antitoxin. Chronic infection of a lung with Vincent's organism is much more difficult to handle. Castellani, who has probably done more work on this subject than anybody else in this country, says it can not be cured if it is of over six months' duration. We have not had the same success with the chronic cases that we have with the acute. For that reason we think it is very important for these cases to be diagnosed and treated early.

ACUTE VEGETATIVE ENDOCARDITIS COMPLICATED BY CEREBRAL EMBOLISM.*

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The case here reported presents a number of points interesting for discussion. It seems best to state these points at the outset, in order that we may have them in mind as their relationship with the details of the case is developed. They are:

1. The menace to health and life to which carriers of chronic focal infection are exposed.
2. The parallelism which may be shown by the behavior of streptococcus septicemia with miliary tuberculosis in history, pathological course and prognosis.
3. The importance of blood culture in febrile cases.
4. The prognostic value of the ratio between the total leucocyte count and the differential count from day to day.
5. An explanation of the etiology of at least one type of musical heart murmur appears to be established by clinical and pathological observation.

The patient was a white man aged forty-five years; occupation cashier.

Family History.—Has a wife and three sons, all in good health. His father died of alcoholism; his mother of kidney trouble; one

*Read before the Albemarle County (Virginia) Medical Society November 6, 1930.

brother of pulmonary tuberculosis; four brothers and one sister are living and well.

Personal History.—He has no definite knowledge of childhood diseases, but supposes he had the usual ones. He had malaria years ago, but not recently. He was subject to sore throat in early life, but has not had much trouble from that source for many years. Except for occasional colds, he has considered himself very healthy. He indulges in alcohol at times, but is not a regular drinker. He never had a venereal disease. His maximum weight was 170 lbs., that being his weight in the January preceding this illness.

Present Illness.—His wife states that he began to look badly in April, but he persisted that he was well, and refused to rest, or to see a physician. In the latter part of May he had pains in his lower extremities, which began in his toes. He consulted a physician, who found that he had albuminuria, and treated him for kidney trouble. At this time it was discovered that he had afternoon fever, that he had been sweating at night, and that he was losing weight. He refused to accept his physician's advice, to quit work and rest. In early July he spent a week in Atlantic City, but, while there, got worse rather than better. At this time he contracted what he called a "cold." The cough, together with the fever, sweats and loss of weight led his physician to make a diagnosis of pulmonary tuberculosis, which accounted for his being referred to me. This diagnosis was to some extent supported by the X-ray of the lungs, which showed thickening at the hili, and some fibrosis radiating into the right upper lobe. The radiologist did not, however, make a positive diagnosis of lung tuberculosis. The blood Wassermann had been found to be negative.

His first visit to my office was July 24th, at which time the above history was, for the most part, obtained.

Examination.—Weight 149 lbs. Pulse regular, 116 per mniute. Respiration 16. Temperature 101° F. Skin rather pale and moist with perspiration. The blood pressure was taken, but not recorded. My recollection is that it was much lower than normal.

The tongue was coated. Several teeth have gold crowns, but the gums and other teeth appear healthy. Examination of the tonsils was unsatisfactory because of gagging. The pharynx showed granulations.

The heart appeared to be moderately enlarged to the left; muscle tone good; no murmurs or arrhythmia; irritability increased.

The expansion of the lungs was ample and symmetrical. Percussion gave no abnormal resonance. Harsh breathing and intensified whisper transmission were heard over the right upper lobe, and over a small spot in the left paravertebral space. Sonorous rales were heard over the hili on deep breathing. No moist or parenchymatous rales were present or induced by coughing.

The abdomen showed no abnormality, the spleen and liver being apparently normal in size.

The urine was acid, with specific gravity 1.020, a trace of albumen, no sugar, and a sediment containing occasional hyaline casts.

The blood was negative for malaria, had leucocutes 11,200 per cu. mm., with polymorphonuclears 74.5 per cent, lymphocytes 13.5 per cent, mononuclears 10 per cent, eosinophiles 1.5 per cent, basophiles .5 per cent.

Clinical Course.—The opinion was ventured at this time that the patient suffered from some other malady than tuberculosis. Quinine therapy was instituted to eliminate malaria. This did not affect the fever in a way that would be expected in malaria. The temperature ran an exceedingly irregular course throughout, ranging usually from 100° to 102°, rising at times to 103°, once to 104°, and several times falling to normal or below, only to register fever again at the next observation. The respiration was slow throughout the early part of the illness, most observations showing between 12 and 16 per minute. Profuse irregular sweating persisted throughout. The bowels tended to constipation, but were readily controlled by enemas or a mild laxative. The appetite was fair, varying according to the toxic state. The pulse was usually between 100 and 110, exceptions being noted later. There seemed to be a decided improvement following his going to bed.

July 26th.—Tonsils, on compression, yield an abundant cheesy and purulent discharge, which has a putrid odor. Both pupils react normally to light and accommodation. The spleen seems moderately enlarged.

July 27th.—Blood culture was taken, which

showed a pure culture of a streptococcus, weakly hemolytic.

July 29th.—Leucocytes 10,200; polymorphonuclears 83 per cent, lymphocytes 9 per cent, mononuclears 8 per cent.

Urine.—Ac. 1.018; alb. 0; sugar 0; indican present in large excess; diacetic acid a trace; sediment contains red blood cells, hyaline, granular and epithelial casts.

August 5th.—The cough had almost disappeared, but now returned in a paroxysmal fashion, with considerable oppression in the sternal region. Examination showed a pulse of 118, and evidence of increased irritability of the heart muscle. A high pitched, ringing musical tone, resembling that made by a small wire guitar string, diastolic in time, was heard at the left second interspace. There was harsh breathing below the left clavicle. Sweating was increased. The leucocyte count was now 7,700.

August 6th.—The musical diastolic tone was now heard best in the right second interspace. It was then realized that the aortic valve had become involved.

August 8th.—The heart is less irritable. There is a slight cough, with harsh breathing below the left clavicle, but no rales. The musical tone is lower in pitch than before, and is heard over the entire upper chest region, and downward over the liver. It is absent only over the left ventricle, and is faint toward the left axillary line. It is not transmitted to the carotid or subclavian arteries.

A fine subcutaneous eruption of purple petechiae of pin point to pin head size is noted, scattered over the back, abdomen, shoulders and forearms. There is a painful superficial excoriation of the tip of the tongue.

August 10th.—Heart findings are unchanged. The pulse is 104, the blood pressure 98 systolic, 38 diastolic. There is some hebetude and confusion. The neck is stiff; the reflexes normal, no Kernig nor ankle clonus.

Urine.—Ac. 1.025; albumen positive; a profusion of granular casts; also hyaline and epithelial casts, and many renal epithelial cells.

Leucocytes 7,100; polymorphonuclears 83 per cent, lymphocytes 6 per cent, mononuclears 11 per cent.

In the afternoon the patient became stuporous, there was an increased fever, and the pulse rate reached 120. A systolic murmur is now, for the first time, heard over the apex. The urine is scanty.

August 11th.—Pulse 114; respiration 20; temperature 100°. The blood pressure is 105 systolic. 38 diastolic. He had a good night until early in the morning, when the oppression of breathing increased. The quantity of urine is increased.

August 12th.—Pulse 108; respiration 16; blood pressure 105—38. The pulse is full, and of a better quality. He feels much better.

August 13th.—At 4 P. M., after having felt better all day, he turned abruptly in bed, and immediately felt pain and oppression in the sternal region, with shortness of breath. A little later he passed into a stuporous state. I reached him at 6 P. M., and found the pulse 140, and very weak. Breathing was somewhat labored. Pupils were equal and responded to light. The heart beat was diffuse, and the sounds weak. The diastolic musical tone, which had been still present when I saw him that morning, had now disappeared, and was not heard again. In its place there was a soft diastolic murmur heard over the right second interspace. An ice-bag was applied to the precordium, and .65 mg. of strophanthin was given intramuscularly. No paralysis was noted at this time, and a pulmonary embolism was suspected. At midnight the pulse was 112, and had improved in quality; respiration 22. He was still in stupor.

August 14th.—There is complete right-sided hemiplegia, including the face. The tongue cannot be moved, and the speech is lost. He is conscious, and can understand what is said. It was at first thought that the power of swallowing had been lost, but this was due to the tongue having fallen back into the pharynx. Swallowing was performed when the tongue was lifted forward by advancing the lower jaw. The urine was now involuntary, and this condition continued irregularly to the end. The Babinski reflex was present on the right, absent on the left. The pupils are equal, and there is no disturbance of the ocular muscles. The lower jaw is somewhat rigid, but the mouth can be opened with the patient's cooperation.

August 15th.—At 2 A. M. he had a sudden oppression of breathing. The pulse was 116, and weak; breathing slightly stertorous. Strophanthin .65 mg. was given. At 10 A. M. the pulse was 114, and its quality improved. He

could still swallow liquids. At 8 P. M. he had pain in the region of the heart, which required morphine. The systolic murmur at the apex is more pronounced. Moist rales are heard posteriorly and laterally.

August 17th.—A systolic murmur is heard at the left second interspace. Rales are increasing in volume, and are advancing in distribution to the lateral and anterior parts of the chest.

August 18th. — He grows progressively weaker. The cardiac impulse is diffuse and heaving. The apical systolic murmur is much more pronounced. The leucocyte count is 3,000.

August 20th.—Patient is weaker. The stupor has deepened. There is cyanosis of the extremities. He died at 1:30 P. M.

Autopsy

Section was begun three hours after death occurred. Scattered over the trunk, arms and thighs are numerous small petechiae, of pin head size, or smaller. A few of the same are seen about the chin and alae nasi.

On section of the skull, the scalp bleeds freely. The dura is normal, and the veins of the brain are greatly congested. There is no evidence of meningitis. Over the region of the parietal fissure the left lobe is slightly softer than the right.

Abdomen.—There are few old adhesions about the appendix, but the organ is patent, and shows no evidence of recent inflammation. Intestines, pancreas, and suprarenals show no abnormality. The spleen is moderately enlarged, rather flaccid, and dark in color. The liver is normal in size. Its consistency is firmer than usual, and the color is deeper. A fine yellowish mottling is seen on the liver surface. On section there is marked passive congestion. The gall-bladder is distended with greenish bile. The kidneys are markedly enlarged, with rather copious perirenal fat. The capsule strips easily, and the surface is granular. There is pronounced venous congestion on section.

Thorax.—The lungs are sunken in the chest, and the upper and anterior portions are pinkish grey, mottled with black. A small superficial scar of an old lesion is found on the anterior surface of the right apex, and a similar scar similarly placed on the left apex. The posterior portions of the lungs are the seat of pronounced hypostatic congestion, being dark purple in color. The right lung still contains air throughout, but the posterior portion of the left lower lobe is almost completely empty of air. There is no pleuritis or pleural fluid present.

The pericardial sac contains a large amount of clear fluid. The heart is somewhat enlarged. The right auricle and ventricle are extremely dilated, the wall of the latter being very thin. The left ventricle is firm, and its musculature increased, especially on the interventricular wall, so that the latter encroaches on the cavity of the right ventricle. The aortic valve is the seat of a vegetative endocarditis, the vegetation having been partly removed by ulceration. The mitral valve also shows a fresh vegetation without ulceration.

Microscopic sections of both valves were stained, and showed a profusion of cocci, some of which could be seen as chains. Sections of the brain showed thrombosis of the left middle cerebral artery with beginning softening of the area supplied by it, but we were never able to demonstrate bacteria in the stained sections of brain tissue.

There were acute toxic nephritis and hepatitis, along with other changes in the organs usually associated with acute septicemia.

Summary

I was fortunate in having the opportunity of observing this patient through the more important part of the clinical course of his disease. The case shows very vivdly the grave pathological possibilities associated with carrying a focus of chronic streptococcus infection. It seems safe to infer a sequence of events beginning with tonsillar infection, then toxic nephritis, later bacteremia, infectious thrombosis of the capillaries of the aortic, and mitral valves, with vegetative and later ulcerative endocarditis, cerebral embolism and thrombosis, and terminal pulmonary edema.

Musical heart murmurs have presented difficulties of interpretation on the basis of physiological physics. In this case, at least, the disappearance of the diastolic musical sound, coincident with the occurrence of embolism, and its replacement by a soft aortic diastolic murmur indicates that the musical tone was produced by the aortic valve lesion, and that the change in the quality of the sound was brought about by the dislodgement of a portion

of the aortic vegetation, thus producing a change in its conformation, consistency and tension.

The blood findings in this case seem to support the hypothesis, (one on which experience has led me to place considerable reliance), that, in streptococcic infections, a decreasing leucocyte count along with an increasing percentage of polymorphonuclear neutrophiles is of grave prognostic import.

The laboratory work in this case was done by my colleague, Dr. Oscar B. Hunter, of Washington, D. C. He was very anxious to demonstrate the presence of bacteria in the brain, and rather loath to release the case for publication until such demonstration had been made. Very persistent efforts to do so met, however, with no success.

I have very little doubt that the fragment which broke off from the aortic valve contained streptococci. Whether the bit that caused embolism in the cerebral artery carried bacteria is not so certain. The time which elapsed between the occurrence of the embolism and the death of the patient, six days, was not sufficient for the development of focal septic inflammation, except from a very virulent organism. In any case, the search was like the proverbial needle and hay-stack affair, and without study of serial sections of the entire brain area involved, success would be largely a matter of luck.

CONGENITAL OBSTRUCTION OF THE POSTERIOR URETHRA.*

By A. I. DODSON, M. D., F. A. C. S.
and
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Obstruction is one of the most serious conditions encountered in the diseases of the urinary tract. Occurring in the ureter, back pressure gradually strangles the tissues of the kidney above, and in addition invites infection and the formation of stones. When the obstruction occurs at the bladder orifice or in the urethra the condition is even more serious, because both kidneys are affected and irreparable damage may be done before the obstruction is removed.

Obstructive lesions constitute by far the largest percentage of congenital defects in the urinary tract, and consist chiefly of valves, strictures of the urethra, hypertrophy of the verumontanum and stenosis of the urinary meatus. These processes set up urinary disturbances early in life, causing back pressure with distortion of the bladder and ureters and destruction of the kidney parenchyma, and in infancy or young childhood are often fatal unless recognized and treated. When the obstruction is slight, the symptoms may not become manifest until late childhood or early adult life. Such patients usually give a history of enuresis, difficult and sometimes painful voiding, dribbling, marked frequency or incontinence. In advanced cases there may be poor appetite, loss of weight, and gaseous distention. The patient may be anemic, sallow, small, and under-developed for his age. Finally, the symptoms of uremia, such as headache, nausea, restlessness, and then coma may ensue.

Congenital obstructions of the urethra have been known and studied for many years. Young and McKay in 1929 covered the subject thoroughly, reporting twenty-one cases of their own and forty-one cases from the literature. More recent reports have brought the total up to seventy-five. To this number we are adding three cases of our own.

The fourth case is one of stricture of the urethral meatus and hypertrophy of the verumontanum. The latter condition has been studied particularly by Bugbee and Wollstein, and by William Witten Robinson.

Case I. S. C. R., aged thirty-five years, has had frequent and burning urination at intervals for the past few years. There was no hematuria, but some tenesmus. Recently there has been some retention, and for several weeks the patient has been catheterizing himself. Examination at the time of admission to the hospital, July 11, 1928, showed a residual of sixteen ounces of urine. The urine contained a definite trace of albumin and numerous pus cells. Cystoscopic examination under ethylene anesthesia showed definite obstruction in the posterior urethra caused by three valve-like processes from the lateral and the anterior walls. The trigone was markedly thickened, the interureteric ridge being so prominent that it seemed to be a part of the obstruction. The anterior valve was destroyed and the trigone was cut through by a Collings cautery knife through the McCarthy cystoscope using a high frequency current. An indwelling catheter was left in the bladder for forty-eight hours.

*Cases reported at the Surgical Clinic of the Norfolk meeting of the Medical Society of Virginia, October 21, 1930.

The patient left the hospital July 16th greatly relieved but with a residual of four to six ounces of urine. He came back for further treatment on September 13, 1928, and under spinal anesthesia, the two lateral valves were destroyed by high frequency current. Following this treatment the obstruction was entirely relieved and the patient has gained in weight and general health He has slight incontinence of urine when standing.

Case II.—S. G., aged ten years, when about six months of age had an attack of urinary retention lasting twenty-four hours and relieved by hot packs. He had no further trouble until three months prior to admission to the hospital, when he began having marked frequency day and night with some incontinence at night. Ten days before admission his right testicle became sore and swollen and has remained so ever since. There was no history of trauma. On admission to the hospital, April 5, 1930, he had an enormously distended bladder. Ten ounces of urine were drawn off and a No. 6 ureteral catheter was inserted in the bladder and kept in place for four days permitting the bladder gradually to empty. The bladder was then allowed to fill and catheterization following urination showed a residual of about thirty ounces. The urine contained an abundance of pus cells. Blood urea was 25 mg. per 100 c.c. of blood. Wassermann was negative; blood count normal except for a mild degree of anemia. Phenolsulphonephthalein test made seven days after admission showed 42 per cent the first hour and 15 per cent the second hour.

On April 9, 1930, a cystoscopic examination under ethylene anesthesia was done. The bladder mucosa was congested throughout. The ureteral orifices could not be located as the bladder was incompletely distended and lying in large folds. The bladder sphincter area was somewhat dilated and on withdrawing the cystoscope back into the posterior urethra a definite fold of tissue could be seen extending from the left side of the posterior wall of the urethra just anterior to the verumontanum to the anterior wall of the internal sphincter (Fig. 1). On the opposite side there was a similar but less pronounced fold. The cystoscope was removed and a No. 12 soft rubber catheter was fixed in the urethra for continuous drainage. A cystogram was made which showed a large irregular bladder with the sodium iodide solution regurgitating into the left ureter and kidney pelvis which were markedly dilated (Fig. 2). On April 14th,

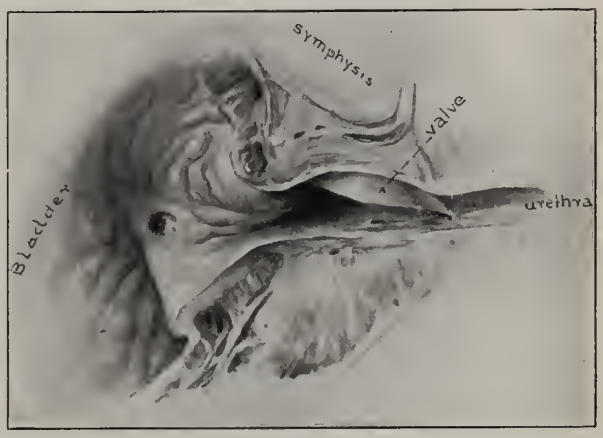

Fig. 1.—Case 2. Sagittal section of urethra and bladder showing a congenital valve extending from the left side of the posterior wall of the urethra just anterior to the verumontanum to the anterior wall of the internal sphincter. There is a slight dilatation of the bladder sphincter.

Fig. 2.—Case 2. Cystogram showing a large, irregular bladder with the sodium iodide solution regurgitating into the dilated left ureter and kidney pelvis.

under ethylene-ether anesthesia, a perineal urethrotomy was done. A McCarthy cystoscope was inserted through the incision and the bladder and the posterior urethra were examined. The valves were destroyed with the high frequency current applied with the Collings electrode. A No. 6 ureteral catheter was passed to the right kidney pelvis and left

in place. A catheter was fastened with a small suture in the perineal wound for drainage of the bladder. As soon as the patient reacted from the anesthetic, a pyelogram was made which showed the right pelvis to be slightly dilated. The next day phenolsulphonephthalein test showed 55 per cent function the first hour and 25 per cent function the second hour on the right side but no function on the left. On April 22nd a left nephrectomy and ureterectomy were done. The kidney substance was found to be entirely destroyed, and the ureter was markedly dilated and tortuous. The kidney measured four inches in length and one and one-half inches in breadth (Fig. 3). On May 6th the patient was discharged in good condition. His bladder control was satisfactory and there was no residual. His urine was entirely clear, containing only a few leucocytes.

Fig. 3.—Case 2. Left kidney and ureter removed at operation. The kidney substance was entirely destroyed. The ureter which was very tortuous was three-fourths of an inch in diameter.

The boy was seen on September 20, 1930. He had gained fifteen pounds and was feeling perfectly well. His urine was normal.

Case III.—R. B., aged nineteen months, was admitted to St. Elizabeth's Hospital July 23, 1930, because of difficulty in voiding. The child was normal at birth and made normal progress until February of this year when he was unable to void and required catheterization. He did well for about six weeks though he sometimes cried when he voided. Since then he has had to be catheterized at increasingly frequent intervals. For the past week he has had to be catheterized every second day.

On July 23rd, under avertin-ether anesthesia, a "baby" cystoscope was introduced. The bladder mucosa was mildly congested and the wall somewhat trabeculated. Both ureteral orifices were slightly gaping. The trigone and floor of the urethra were normal. Hanging from the anterior wall of the urethra, just external to the bladder sphincter, was a curtain-like valve which seemed to be attached for about one-third of the circumference of the urethra and occupied about three-fourths of the urethral lumen (Fig. 4). This was thoroughly fulgurated and a No. 14 rubber catheter was placed in the urethra for twenty-four hours.

Fig. 4.—Case 3. Sagittal section of urethra and bladder showing dilatation of the sphincter and of the ureteral orifices and a congenital valve hanging from the anterior wall of the posterior urethra. "A" shows cystoscopic view of the valve which sprung from about one-third of the circumference of the urethra.

The child left the hospital in very good condition twenty-four hours following treatment, voiding with considerable pain but quite freely.

When seen on July 28th there was no evidence of obstruction, but considerable discomfort when voiding. On September 1, 1930, his mother reported that he was free of symptoms.

Case IV.—G. V. C., aged nineteen years, had had urinary incontinence until twelve years of age. Then he found that by voiding every fifteen or twenty minutes in small quantities he could avoid involuntary urination when awake. He was admitted to St. Elizabeth's Hospital on January 4, 1930. For the past three months he had diarrhoea. Physical examination revealed acute tonsillitis; congenital deformity of left ear; right epididymitis; stenosis of urethral meatus; and tenderness over the right lower quadrant of the abdomen and along the course of the right ureter. His blood count was normal, Wassermann negative, and blood urea 33 mg. per 100 c.c. of blood. Phenolsulphonephthalein elimination was 30 per cent in one hour. The urine contained numerous pus cells and a large trace of albumin. On January 29th, under ethylene-ether anesthesia, a right epididymectomy, meatotomy, and plastic operation on the left ear were done. At the same time a cystoscopic examination was made. The bladder was seen to be very much deformed. The verumontanum was very large and there was almost complete obliteration of the internal bladder sphincter (Fig. 5). On the base of the bladder a considerable distance back, there were two diverticula (Fig. 6). The ureteral orifices could not be made out so it was thought either that they entered the diverticula or that the apparent diverticula were dilated ureters. On February 3rd, a cystogram was made which showed both ureteral orifices to come off from round diverticula about one inch or more in diameter.

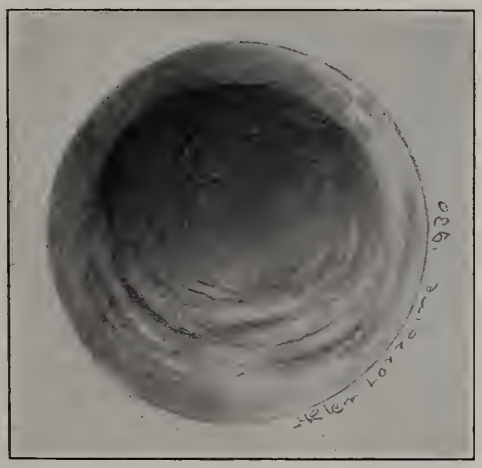

Fig. 5.—Case 4. Urethroscopic view of almost complete obliteration of the internal sphincter.

Fig. 6.—Case 4. Cystoscopic view showing two diverticula on the base of the bladder. There is no evidence of trigone.

Both lower ureters were dilated, especially the left, and on that side the solution extended up to the kidney, showing marked dilatation of the calyces. On the right side the solution ex-

Fig. 7.—Case 4. Cystogram, February 3, 1930, showing regurgitation of the sodium iodide solution into the dilated ureters coming off from round diverticula about an inch in diameter. On the left side the solution extends up into the kidney pelvis.

tended upward in the ureter for several inches. The left kidney shadow was enlarged, that of the right was not seen (Fig. 7).

Cystoscopic examination on February 7th, under ethylene anesthesia, showed the bladder mucosa congested throughout and the bladder wall definitely trabeculated. Situated at the base of the bladder were the two round openings which represent the orifices of the diverticula previously described. The ureters opened into the diverticula. There seemed to be no evidence of the trigone and very little evidence of an internal urethral orifice. The posterior urethra seemed to be almost a part of the bladder. The verumontanum was very large and bulged into the urethra just at the area where the obstruction seemed to exist. No other definite obstructive lesion could be made out with the cystoscope. The verumontanum was partly destroyed by high frequency current and a trocar was inserted just above the pubis and into the bladder and a catheter threaded through this and left in place for permanent drainage.

The patient did very well until three days after operation when the abdomen began to distend, necessitating opening the wound, placing drainage, and doing an enterostomy. It was found that the trocar had pierced the intestine. He was quite sick for two or three days but left the hospital on March 9th in good condition, wearing a suprapubic catheter for continuous drainage.

On April 6th, he returned to have the bladder checked up and the catheter renewed. For the last several days the catheter had not been draining. The bladder showed the same appearance as it did on previous examinations except that it did not seem to be as large. The old catheter was withdrawn and a new mushroom catheter placed in the bladder through the suprapubic wound.

On May 20th a cystogram was done which showed the same condition as previously reported, but this time the right ureter and kidney pelvis filled from the injection in the bladder (Fig. 8). Hemoglobin was 70 per cent, red cells 3,200,000, white cells normal. Phenolsulphonephthalein test showed 18 per cent the first hour, 26 per cent the second hour. Blood urea 68 mg. per 100 c.c. of blood. The urine contained a moderate amount of albumin and numerous pus cells. The patient was given a low protein—salt poor diet and requested to return in thirty days.

On June 19th he returned feeling very much better and showing a gain in weight of about twenty pounds since operation, with a blood urea nitrogen of 22.08 mg. per 100 c.c. of blood and an elimination of 68 per cent phenolsulphonephthalein in two hours. The suprapubic

Fig. 8.—Case 4. Cystogram, May 20, 1930, showing the right ureter and kidney filled from the injection in the bladder.

drainage was removed and the patient told to return in two months.

On August 22nd, he returned in very good condition. The capacity of his bladder was found to be about ten ounces. He stated that he could retain his urine from one and one-half to three hours with perfect control, but still has occasional nocturnal enuresis.

BIBLIOGRAPHY

1. Addison, Oswald: Congenital Valvular Obstruction of the Urethra. *Arch. of Disease in Childhood*, 4:255-260, 1929.
2. Ballenger, E. G., Elder, O. F., and McDonald, H. P.: Concerning the Diagnosis of Rarer Types of Obstructive Lesions in the Male Urethra. *The Journal of Urology*, 23:259-268, February, 1930.
3. Browne, Henry S.: Congenital Obstructions of the Urethra. *The Journal of Urology*, 23:275-279, February, 1930.
4. Bugbee, Henry G., Wollstein, Martha: Retention of Urine Due to Congenital Hypertrophy of the Verumontanum. *The Journal of Urology*, 10: 477-490, December, 1923.
5. Bugbee, Henry G., Wollstein, Martha: Surgical Pathology of the Urinary Tract in Infants. *Journal of the American Medical Association*, 83:1887-1894, December 13, 1924.
6. Hinman, Frank, Kutzmann, Adolph A.: Congenital Valvular Obstruction of the Posterior

Urethra. *The Journal of Urology*, 14:71-112, August, 1925.
7. Hullsiek, R. B.: Congenital Valvular Obstruction of Posterior Urethra. *Minnesota Med.*, 13:412-413, June, 1930.
8. Kretschmer, Herman L., and Pierson, L. E.: Congenital Valve of the Posterior Urethra. *American Journal of Disease of Children*, Vol. 38, pp. 804-817, October, 1929.
9. Lowsley, Oswald S.: Congenital Malformation of the Posterior Urethra. *Annals of Surgery*, LX:733-741, 1914.
10. Ormond, John R.: Congenital Valve of Posterior Urethra. *Journal of the Michigan State Medical Society*, 28:492-493, 1929.
11. Morris, H., and McCrea, E.: Notes on a Case of Congenital Obstruction of Urethra. *British Journal of Radiology*, 1:485-486, 1928.
12. Randall, Alexander: Congenital Valves of the Posterior Urethra. *Annals of Surgery*, 73:477-480, April, 1921.
13. Randall, Alexander: Congenital Valves of the Posterior Urethra With Report of a Case. Transactions of the American Association of Genito-Urinary Surgeons, 22:299-305, 1929.
14. Robinson, William Witten: Congenital Hypertrophy of the Verumontanum as a Cause of Urinary Retention. *The Journal of Urology*, 17:381-390, March, 1927.
15. Rytina, A. E.: Radical Removal of the Verumontanum, with Notes on Pathology. *Journal of the American Medical Association*, 64:45-47, 1915.
16. Schacht, Fred. W.: Congenital Valvular Obstruction of Prostatic Urethra with Vesical Diverticulum. *Journal of Urology*, Vol. XXIV, p. 83, July, 1930.
17. Young, Hugh H., McKay, R. W.: Congenital Valve Obstruction of the Prostatic Urethra. *Surgery, Gynecology and Obstetrics*, pp. 509-535, April, 1929.

THE HYPOTHYROID STATE.*

By EDWARD L. ALEXANDER, M. D., Newport News, Va.

This brief report concerns a group of chronic sufferers from thyroid deficiency, who do not present the classical clinical symptoms of myxedema and cretinism. There have been many excellent reports in the literature recently covering this subject in a most interesting and comprehensive way. Many of these reports have emphasized the inadequacy on the part of textbooks in dealing with this subject. In one textbook, for instance, thyroid deficiency is spoken of as hypothyroidism and subtitled, myxedema and cretinism, the discussion of which deals only with these two conditions. Lying between the conventional normal and these clinical entities of absolute thyroid deficiency, there are found many varying degrees of thyroid deficiency.

The symptomatology of mild states of thyroid dysfunction is often extremely vague and elusive, so much so, that physicians are often thrown entirely off their guard. This is not because the physicians lack clinical judgment or diagnostic acumen, but, first, because the classical signs of major hypothyroidism are not present, such as described by Osler[1] as, "Marked increase in the general bulk of the body, a firm, inelastic swelling of the skin, which does not pit on pressure, dryness, and roughness, which tend with the swelling to obliterate the facial lines of expression, imperfect nutrition of the hair, decreased perspiration, over-weight and slow pulse." Second because they do not avail themselves of basal metabolimetry, which to my mind, is one of the most important methods of diagnostic precision that is available to the clinician today.

The purpose of this report is not to add anything new to what has already been said, because the field has been comprehensively covered in the recent reports appearing in the literature. My only excuse for writing this report is to call attention to the relative frequency of obscure hypothyroid states occurring in Tidewater Virginia, where goiter is not endemic.

When I began to practice medicine in Tidewater Virginia, I began to encounter occasional cases presenting symptoms such as, nervousness, undernutrition, often times palpitation, and even tremor with perhaps some slight enlargement of the thyroid gland. My first impression was naturally to assume that I might be dealing with hyperthyroidism. Basal metabolic studies revealed, often to my amazement, that the patient was suffering from a low metabolism rather than any toxic condition of the thyroid. I believe that these symptoms at times justified such a conclusion. Being fresh from under the wings of hospital training, I thought of thyroid dysfunction in terms of thyrotoxicosis and myxedema. This could in part be explained by the textbooks' descriptions of such conditions and having no comprehension that such mild deficiencies might exist.

Symptoms depend upon alteration of normal function, therefore, let us consider the etiology of symptoms resulting from mild states of thyroid dysfunction in the light of altered physiology. Much is understood concerning the function of the thyroid gland. Baumann, in 1896, found iodine to be the normal constituent of thyroid tissue. Kendall,[2] in 1914, isolated thyroxin, a substance which manifests most of the properties of thyroid substance.

*From the Medical Department of Elizabeth Buxton Hospital. Read at the sixty-first annual meeting of the Medical Society of Virginia, in Norfolk, October 21-23, 1930.

Magnus Levy, in 1895, observed that thyroid substance produced a striking increase of heat production. Von Noorden has said, "The thyroid acts on oxidation as a pair of bellows rejuvenates a fire." DeQuervain[3] mentions four principal functions as follows: "First, control and stimulation of tissue growth in general. Second, control and stimulation of the functional processes of tissues. Third, neutralization of the toxic substances produced in the normal metabolism of the tissues. Fourth, assistance in the defensive action of the organisms against bacterial toxins." Removal of the thyroid gland from animals results, it is said, in a 40 per cent reduction of the metabolism. We know that much of the body physiology is dependent upon metabolism. Palmer[4] defines metabolism as follows: "By metabolism is meant the chemical changes which substances undergo when brought in contact with the living cells of the body." Two factors are involved, catabolism, or reduction of higher to lower compounds, and anabolism, the building of complex substances from simple ones as the result of these chemical changes. Heat, mechanical energy, electric current, all of which may be measured as heat, are produced and life is sustained. Therefore, if so much of normal body function is dependent upon metabolism and so much of normal metabolism is dependent upon thyroid function, it is easy to conceive of the vast complexity of symptoms arising from such an altered state.

Basal Metabolism: The advent of metabolimetry marked an important area in the understanding of metabolic disorders. In all states of thyroid deficiency, there is always a low metabolism. It is true that other endocrine disorders can give rise to low metabolic rates, especially hyposuprarenalism. We must be on the lookout for these. Let us consider the indications for subjecting our patient to a basal metabolism. I have come to do routine metabolisms on all patients suffering from unexplained symptoms and a great many times when I feel reasonably sure that some of the symptoms have been explained. The procedure is simple, the apparatus not costly, does not take much of the physician's or patient's time, and any intelligent technician can make these tests satisfactorily. Osler states that among the indications for suspecting hypothyroidism are: unexplained constipation and over-weight. I do them routinely on all chronic arthropathies and myalgias. Obesity is a distinct indication. Many states of disordered psychic function will often reveal startlingly low metabolisms.

Symptomatology: This report represents the study of one hundred unselected patients with chronic symptoms of one kind or another. Many of these cases presented no special reason for doing metabolic studies. Thirty per cent of this series gave rates from minus ten to minus fifty-one. Incidently, the minus fifty-one presented nothing to suspect myxedema. None of the classical signs were present. The patient's symptoms were more suggestive of a mild deficiency.

Fatigue: This was the most outstanding symptom in my series and occurred in all of the thirty cases. There is something characteristic about this fatigue. The patient will usually tell you that he or she awakens in the morning feeling refreshed and rested from the night's sleep but as the day wears on, fatigue and exhaustion overtake them. They are wholly unable to cope with the physical and mental demands of their work. These patients are not necessarily neurastheniac, many of them are intelligent, hard-working people who consult us in pitiful quest of health.

Gastrointestinal: Constipation is a very frequent symptom which, in all likelihood, is the result of sluggish peristalsis probably due to disturbances of the automatic nervous system giving rise to intestinal atony. There is very often a hypoacidity. There is a preponderance of constipation in women especially around the menopause which is striking. There is a general slowing-up of intestinal function giving rise not only to hypoacidity and constipation but often to vague abdominal pains and sometimes anorexia. Many cases, no doubt, have been diagnosed as chronic appendicitis or chronic pelvic disease and submitted to surgery without help.

Blood Vascular System: The pulse rate presents no characteristic. It may be fast or slow. I have recently seen a pulse rate of one hundred and twenty with a minus twenty-two basal rate and many of the symptoms accompanying thyroid deficiency. The blood pressure does not help very much but the analysis of the few cases I have studied shows that about 45 per cent of them have hypotension. The blood picture has not presented any outstanding finding. I have had one or two cases

showing what I thought was a mild pseudo-angina, so-called, whose symptoms have been relieved with thyroid therapy. I have not done routine blood sugar studies on these patients but, in the few that have been done, there has been no constant hypoglycemia.

Central Nervous System: Many of these patients complain of paraesthesias of one kind or another. One patient whom I saw, a colored man, whose chief complaint was a generalized burning all over the body, said to me, "Doctor, I feel like there is fire under my skin." This was the only symptom complained of and there were no clinical findings to make one suspect thyroid deficiency. His basal metabolic rate was minus thirty-five. I put him on thyroid, and while I have been unable to obtain any direct information as to his health, he has been reported to be working daily. He disappeared from observation after starting treatment.

There are many psychic manifestations, from simple complaints of nervousness to what seems to be almost a psychosis at times. Three of my patient complained of numbness about the head.

Headache: Headache, of course, is a fairly constant symptom, often migrainous in character. I began to study the cases which I encountered, whom I thought had migraine, from an allergic standpoint. There were significant reactions to proteins, elimination of which, in two cases, improved the migraine. Subsequent basal metabolic study revealed low metabolisms in which thyroid therapy contributed to the relief of the migraine. I believe that I have noticed some relationship between allergic disease and thyroid deficiency. Certainly, there is a rather constant finding of hypoacidity relative to the gastrointestinal tract in both conditions. Of course, one or two cases illustrate nothing but I wish to call attention to this fact that others interested in this work may make observations on their cases.

Respiratory: These people quite frequently show a preponderance of upper respiratory infections. Whether it is a cause or the result of thyroid deficiency, I am unable to say. Reference has been made in the literature concerning the relationship of some cases of vasomotor rhinitis as being related to thyroid deficiency. Richards and Ullian[5] in an analysis of one thousand basal metabolic rates found eight cases of vasomotor rhinitis which were materially benefited by thyroid therapy. Lee[6] has found some cases of vasomotor rhinitis in young adults in whom nothing was found but a low basal metabolic rate and relief was obtained with thyroid therapy. Some of these people were abnormally susceptible to colds.

Skin: While dry skin and decreased perspiration are fairly constant symptoms, they are not always present. These people almost universally complain of cold hands and feet and are often found to be sleeping under abnormal amounts of covering at night. There are doubtless some skin conditions associated with mild types of thyroid deficiency. Richards and Ullian found in their one thousand basal metabolic rate determinations fourteen cases of chronic skin diseases who improved on thyroid. One case in my series presented skin lesions simulating very much an old, chronic luetic skin—Wassermann, negative. Recovery was complete under thyroid therapy.

Muscles and Joints: The predominance of myalgia and arthralgia in this series has been most striking. The symptoms have been emphasized in the literature. It has long been known that some relationship exists between certain forms of rheumatism and low metabolism. Pemberton[7] says, "That in general, basal metabolism in arthritics tends to be low." A predominance of joint and muscle symptoms prevails in women at menopause. The tendency to arthritis at this period is striking. The endocrines more often show signs of disordered function. Predominance of backache is often encountered at this stage of their lives. In my experience, I have seen some improvement on thyroid therapy of backache in these patients. Many of these patients are subjected to pelvic surgery and often to the disappointment of the surgeon. The possible relationship between joint symptoms and thyroid deficiency might in part be explained by what Pemberton has recently said in a survey of the problem of arthritis, "That at least part of the pathological deviation productive of the symptoms and morphologic changes of arthritis is to be found in the alteration of the blood flow in the finer vessels, probably in the nature of vasoconstriction. Further, the tendency toward the low basal metabolic rate in arthritis is probably to be explained on the same basis, namely, a curtailment of the finer blood flow in at least the muscular tissues." The cold hands and feet, the often lowered blood pressure, the hypersensitiveness to cold, together

with the joint and muscle symptoms encountered in patients with thyroid deficiency, might be explained on the basis of curtailment of the blood flow in these tissues.

Nutrition: In my small series, this has been no constant finding. I have encountered as many patients under-weight as are over-weight. Many of them are normally nourished. It may be that deviation of catabolic and anabolic function might explain these phenomena.

Genito-Urinary: The water-logged myxedema patient is well known. The urinary excretion is definitely limited in these cases. However, this is not necessarily true of mild states of hypothyroidism. Beck[8] has called attention and reported cases of nocturia, pollakiuria, dysuria, pyuria, and incontinence due to thyroid failure. In my group, I have noticed no definite constant urinary symptoms.

Etiology: Warfield[9] has recently reported a group of eighty-eight cases of thyroid deficiency, 95 per cent of which were from the Great Lakes' region. Here goiter is endemic. He believes that the deficiency of iodine in this region may be responsible for the eventual failure of the thyroid. He said, "Here in the Great Lakes' region, we are seeing three and four generations of the pioneers, who came from the Eastern Seaboard, from Germany, Norway, and Sweden, districts where goiter is rare. The settlers found a soil without iodine. The first generation obtained iodine from their mothers but, owing to the lack of iodine in food and drink, the mothers of each generation could not replenish the store in the thyroid gland and their daughters and granddaughters had less and less." Iodine deficiency does not explain the incidence of thyroid dysfunction in these cases on the Virginia peninsula. We have an abundance of iodine. Harrell[10] has recently reported a group of two hundred patients on whom basal metabolisms were done and of which group one hundred and fifty-four had a basal rate of minus five or below. The other etiological factors which have been noted are first as mentioned by Kocher: mild states of hypothyroidism following severe general infections. DeQuervain says that slighter forms of hypothyroidism occur in patients whose glands have been damaged by inflammatory infection or endemic goiter. Operations in which subtotal thyroidectomy has been done is given as one of the causes. None of my series has ever had thyroidectomy and I have been unable to determine any unusual inflammatory or focal disease that might throw light on the etiological factors.

Therapy: There are no more dramatic pictures in all the realms of therapeutics than to see, as Osler said, "How a poor, feeble-minded, toad-like caricature of humanity may be restored to mental and bodily health," in speaking of myxedema. While the therapeutic results are not as striking in treating these mild states of hyopthyroidism, the results are very encouraging and often times, when the physician is at his "rope's end" in treating a patient with chronic symptoms, he will obtain results with thyroid gland unparalleled by any other therapeutic measures.

As to the preparation to use, I can only say, "Find some good preparation with whose physiological and clinical strength you are familiar and stick to it." I think too often we consider too seriously the conventional standard of minus ten and consider the patients as having normal rates when they present a minus five or seven. Given a patient with chronic symptoms, even though there may be little to suspect thyroid deficiency and even though he or she has a rate of minus five or seven, try a little thyroid therapy. It will do no harm, it may do a great deal of good. Thyroid therapy must be like all other methods of therapeutics,—given in conjunction with other remedies at your command. It must be said, however, that not all patients presenting symptoms as outlined, who have reductions of basal metabolisms, will respond to thyroid therapy. At times, other endocrinopathies will exist and therapeutic measures must be instituted to that end. However, Richards and Ullian make the statement that in endocrine dysfunctions, particularly of the ovaries and pituitary, the improvement from glandular therapy is to a large degree dependent on correction of thyroid disorders.

In my opinion, at the beginning of treatment, the dosage should be small. Increase of dosage should be guided by the patient's feelings and further metabolic studies. The symptoms of over-dosage are well known. These symptoms, unfortunately, appear at times even though the numerical value of the basal metabolism has not changed. One patient seen some time ago presented the symptoms of thyroid deficiency. Basal metabolic rate was minus twenty-two. Fairly large doses of thyroid were prescribed after small doses had produced

no improvement. He consulted my office one day with the statement, "I am so nervous I don't know what to do and my heart feels like it will jump out of my body." The pulse rate was found to be one hundred and twenty and his cardiac action resembled that of hyperthyroidism. His basal metabolic rate on that day was minus 32 per cent. Treatment was discontinued with prompt relief of the toxic symptoms. Lawrence has called attention to the appearance of toxic symptoms before the basal metabolism reached normal.

If the patient is considerably over-weight, put her on a low caloric diet along with thyroid. If she is nervous, give her a little sedative. If she is under-nourished, boost up her calories. If she is constipated, prescribe an oily laxative. If she is allergic, study her from an allergic standpoint. If there is psychoneurosis, give her mental tonics. All in all, consider the patient in general.

My plea in this brief discussion has been to try to impress upon you more fully the significance of these mild states of thyroid deficiency. Keep ever in mind the valuable metabolism machine when you are studying a patient with chronic disease.

BIBLIOGRAPHY

1. Osler's Principles and Practice of Medicine, tenth edition.
2. Kendall: *American Journal of Physiology*, 1917.
3. DeQuervain, Fritz: Goitre and Thyroid Disease. N. Y. *William Wilkins and Company*, 1924.
4. Palmer: Nelson's Loose Leaf Medicine.
5. Richards and Ullian: Medical Clinics of North America. March, 1925.
6. Lee, R. I.: Medical Clinics of North America. May, 1925.
7. Pemberton, Ralph: *American Journal of Medical Sciences*. November, 1929.
8. Beck: *Endocrinology*. September and October, 1927.
9. Warfield, Louis M.: *Journal of the American Medical Association*. October 11, 1930.
10. Harrell, C. L.: *Virginia Medical Monthly*, May, 1930.

DISCUSSION

DR. JOSEPH BEAR, Richmond: This is, indeed, a very interesting subject. I should like to discuss it briefly from an obstetrical standpoint. Many of these hypothyroid cases are to a large degree sterile, due to the fact that they have a condition known as infantilism, possessing an infantile uterus and hypodevelopment of the ovaries. From an obstetrical standpoint, these cases make very poor risks, due to the fact that the associated symptoms—constipation, overweight and a train of neurotic manifestations, render them very prone to toxemia.

Lang and Nicholson have done considerable work with these hypothyroid cases. They found that they developed albuminuria and, with the oral administration of thyroid extract, the urinary condition in majority of cases completely disappeared. The most important point to consider in these cases is routine basal metabolic readings and if the test proves below a plus or minus ten (10), thyroid medication should be instituted. In so doing we take one of the most important steps from an etiological standpoint, in eliminating future eclampsia, because patients already have a disturbed thyroid and, if permitted to go through pregnancy, with the increased weight and the impaired metabolism, the patients become toxic and frequently go into the pre-eclamptic state and ultimately into true eclampsia.

The so-called "short, fat-necked" obstetrical patient should be looked upon with a great deal of suspicion. I wish to offer the suggestion that if this type of hypothyroid case would have a routine metabolic test made, the much dreaded obstetrical complications (pre-eclampsia and true eclampsia) would be materially lessened.

DR. ALEXANDER, closing the discussion: I have very little further to say, except to thank Dr. Bear for his discussion.

There is one other point to which I failed to call attention. Menstrual disorders are found fairly frequently in these cases. In Dr. Warfield's recent report he calls attention to eight of these cases of menstrual disorders of one kind or another occurring in a series of eighty odd cases of thyroid deficiency. These disorders are menorrhagia, scanty flow, and dysmenorrhea. Very often thyroid gland alone will give relief without resorting to ovarian medication.

EARLY FINDINGS IN DISSEMINATED SCLEROSIS.*

By JAMES ASA SHIELD, M. D., Richmond, Va.
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The early findings in disseminated sclerosis are of particular interest as it is one of the most common neurological diseases to be overlooked until the patient has reached rather an advanced stage. One is accustomed to looking for the Charcot triad—intention tremor, scanning speech, and nystagmus, which are truly still as classical as the day he described them within the walls of old Salpetriere. We must remember that L'hopital Salpetriere was and is where several thousand advanced neurological cases are hospitalized, the majority being chronic and, when admitted, are in a rather advanced stage of their invalidism. This was truer in the days of Charcot and Marie. Now in the famous clinic that carries their names the triad is looked for, but usually these cases are picked up before all, and at times any, of the triad makes itself known. We may say that at the Charcot Marie Clinic and other European neurological clinics, disseminated sclerosis is the most common disease excepting lues.

The pathological findings aid us in under-

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standing the clinical picture as well as the course of the disease. Marbury's name "encephalomyelitis periaxial sclerosis" is one that pictures the disease and gives an explanation of the pathological findings, and the diagnostic points. The sclerosis comes after repeated inflammation, the "remissions" between the inflammatory attacks.

The clinical picture as well as the course of the disease is determined by three main pathologic features: First, there are foci of inflammation; these may be few and constricted, later becoming numerous and widespread. These on healing leave sclerotic patches. Second, there is the degeneration of the myelin sheath and preservation of the axis cylinder in the midst of most extensive patches of sclerosis (secondary to periaxial neuritis). Third, there is destruction of the axis cylinder, so that secondary degeneration occurs only after a long time. The destruction of the myelin sheath explains the partial impairment of function, while the preservation of the axis cylinder accounts for the possibility of remissions. It is only when both are destroyed that the signs and symptoms become permanent.

There is a predilection for the white matter and for some reason the process involves to a great extent certain portions at first,—the optic nerves; the white matter of the spinal cord, especially the pyramidal tracts; the medulla; the pons, and mid-brain; the Deitero-rubral pathways. The gray matter of the brain and cord is usually spared. Thus it is pathologically a very definite entity; while clinically it is a manifold, insidious, remittent disease.

Macroscopically, the meninges are usually edematous and thickened; there are visible tough leathery patches. Microscopically, there is some cellular infiltration with gitter cells (Hassin), but the main feature is a proliferation of glia cells with dense fibres. The vessels show slight changes, hyaline degeneration and even occlusion. It is not known definitely whether the disease is primarily toxic degeneration (Hassin), with secondary gliosis, or primarily an inflammation with secondary degeneration and gliosis (Marbury).

In 1913, Joseph Steiner, of Heidelburg, was quite sure and until this day believes that the spirillum is the etiological factor, but he and he fellows are alone in this consistent finding. Since 1927, in 176 of 180 cases of disseminated sclerosis a filterable virus has been found in the cerebrospinal fluid by Miss Chevassut in the laboratory of Sir James Purves-Stewart (London). This "spherula insularis," the name given to the ultra microscopic organism, has not been demonstrated in any other nervous disease. The organism is characteristically spherical and about 1/10,000 the diameter of a red blood corpuscle.

The diagnosis should take into consideration especially the slow gradual commencement in youth, the afebrile, intermittent, remittent course, often being ushered in with a retrobulbar optic neuritis; this gives the fleeting visual disturbances, accounted for by the pressure on the central artery of the optic nerve which is caused by the periaxial neuritis. The papulomacula bundle function is impaired and thus we find a central scotoma. We may also have a temporal pallor. The patient may complain of swimming of objects before the eyes, transient blindness, double vision, or difficulty in moving the eyes freely.

Next in frequency to the eye changes we have involvement in the pyramidal tract, with disturbances of motility as the prominent symptom. The efferent arc of the abdominal reflex runs in the pyramidal tract from the motor cortex downward; there is early impairment and loss of the abdominal reflexes. There is gradual difficulty in walking, spastic tendencies in gait, and increased hypertonicity of the legs; if the posterior columns are affected, the patient stumbles or falls in walking. The ataxia varies and may be an early or a late symptom. The patient may have Oppenheim flaccid arm (loose); the Babinski may be present. The rubral component may account for the tremor; this may also tend to explain the slowness of speech and the breaking up of words into syllables. The vestibular mechanism may be involved, thus pointing to a lesion in the medulla, pons or corpus quadragemina, giving nystagmus as a symptom. Sclerotic patches may give objective sensory disturbances from hyperesthesia to complete loss of sensation. Anesthesia of the face and a complete hemianesthesia are rare. We may have astereognosis. The cranial nerves are usually spared. Sexual impotence, difficulty in micturition, slight incontinence, all point to severe sacral involvement. Emotional disturbance, especially impulsive laughter, is said by Oppenheim to be a true thalamic sign and not a mental symptom.

Syndromes of subjective complaints are not uncommon; there may be some numbness and weakness, or stiffness of the legs and the arms; perhaps fatigability, slight difficulty in walking, occasional dizziness, or a little emotional disturbance. Such symptoms are often looked upon as hysterical or psychoneurotic instead of the mild scattered involvements of the nervous system. Psychotic manifestations are rare but at the end we may get an organic dementia.

An acute onset is uncommon, yet an acute or apoplectic hemiplegic form of disseminated sclerosis may be seen, or the disease picture is ushered in by symptoms of a transverse myelitis. Although these cases recede and follow a remitting course, the disease soon begins to show a progressive tendency. We have also a pyramidal tract involvement, giving a picture similar to amyotrophic lateral sclerosis, so-called "Dejerine type."

Marbury has attempted to type the disease,—*sacral*, in which the sacral cord is involved with sphincter disturbance; *cervical*, in which acute unilateral ataxia, astereognosis, sensory changes and spasticity are the essential features of the picture; *bulbar*, in which disturbances in phonation, articulation and deglutition are more prominent; *pontine*, in which we usually have involvement of the facial or trigeminal nerve or nerves; *cerebellar*, in which asynergy is the symptom that stands out.

To sum up, in any case of fleeting diplopia, swimming of objects before the eyes, or transient blindness; in any case of paresthesias with simultaneous change in the abdominal reflexes, with any young person suffering from some kind of vertigo, signs of scotoma, or from symptoms of paresis, even though for quite a short period, disseminated sclerosis should be taken into consideration and the diagnosis ascertained by a most careful examination, especially of the eye. The typical eye symptoms are central scotoma, particularly for colors, and increasing pallor of the temporal side of the fundi.

The tragedy of the situation is that certain organic nervous diseases have not interested those practitioners who are not neurologists; hence, a vast majority of these distressing conditions have not been detected early enough for the institution of proper treatment, which often is most effective. If this paper has in any way stimulated such interest, I shall be more than gratified.

212 *West Franklin Street.*

Discussion

Dr. Beverly R. Tucker, Richmond: I shall make only a few comments on this paper. Several years ago disseminated sclerosis was recognized in its last stages, and only in its last stages, even by competent neurologists. Today, from Dr. Shield's paper, you will see that it can be very easily recognized, if we bear the pathology in mind, in the early stages. In these early stages the institution of treatment offers very great hope of two things: One is, if we might use the expression, the hope of permanent remission in mild cases, and the other is the arrest of the disease, so that, when its recurrence comes, the recurrence will be very slight. Now, there are thousands of these cases that are unrecognized; it is one of the most common of organic nervous diseases; and it is very important that we bear it in mind in testing any case that shows change in reflex, transitory change of vision, or peculiarity of speech, sight, or emotion. It is a condition that must be borne in mind. Dr. Shield has explained these symptoms by their organic pathology, and that is the only way to take up this condition. He is going to follow this paper by a paper on treatment. The understanding of this has probably advanced more in the last few years than the understanding of any other chronic disease, and, fortunately, along with it therapy has advanced with like rapidity. So I think it is a disease that should interest everyone, and we can look forward to great benefit by the proper treatment of this condition and not wait until the last stages. Of course, we should not wait until the advanced stages of any disease. Nowadays the treatment which is most likely to be beneficial and efficient is one that should quickly follow the diagnosis.

THE RELATIONS OF HUMAN AND VETERINARY MEDICINE.*

By MAURICE C. HALL, Ph.D., D. V. M., Washington, D. C.
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In a consideration of the relations of human and veterinary medicine, the subject may be discussed from the standpoints of the scope of the two fields of medicine, the basic differences between them, the mutual interests of the two, and the personal and professional relations which do exist and those which should exist between the physician and the veterinarian. Assuming that you are familiar with the status of the physician in the United States, the following facts in regard to veterinarians may be of interest:

According to the latest report of the Committee on Education of the American Veterinary Medical Association, there are in the United States 12,240 graduate veterinarians, of whom 1,539 are engaged in federal work. The non-graduate veterinarians in practice are estimated at 2,813. The total number of veterinarians is, thereforely, slightly over 15,000. The average number of seniors in the veterinary colleges during the past ten years was

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152, a figure far below the number of graduates of the medical schools annually for the past ten years; my impression is that the medical schools graduate about 4,000 students annually, a number almost equal to the total membership of the American Veterinary Medical Association. Graduation from high school is a required prerequisite for admission to the veterinary schools, but about 17 per cent of the students who enter have had some college training. A number of veterinarians have the degrees of B. S., A. B., M. S., A. M., Ph.D., D.Sc., or M. D., obtained either before entering veterinary school or subsequently, but figures as to the number of these do not appear to be available.

The Scope of Human Medicine

The field of human medicine is delimited from veterinary medicine primarily by the nature of the patients involved. It follows from the fact that physicians deal with only one species of patient, man, and from the highly specialized nature of that patient in certain respects, that the physician deals with his patient in a highly specialized manner. This has led to the development of specialists in various fields of medicine, the formation of elaborate clinics, the construction of expensive hospitals, and an elaboration of laboratory methods. To a great extent the physician's patients are examined, treated, and operated on outside of their homes.

The Scope of Veterinary Medicine

The field of veterinary medicine eliminates from its consideration only the one animal, man, as being the subject of the physician, and one way or another takes the remainder of the animal kingdom as potential subjects of its activities. The greater part of the veterinarian's activity is concerned with domesticated animals, but even this field expands constantly as more domesticated animals are given attention and as more kinds of animals are domesticated. A quarter of a century ago, the veterinarian was mostly concerned with diseases of the horse. Today the Committee on Education finds that among domesticated animals, cattle require almost 40 per cent of the veterinarian's time, horses almost 20 per cent, small animals, such as dogs and cats, almost 20 per cent, swine about 16 per cent, poultry almost 3 per cent, and sheep 2.5 per cent. However, quite a number of American veterinarians have a practice dealing entirely or largely with foxes and other fur-bearing animals, game animals, or animals in zoological parks. One must also keep in mind that in some countries the domesticated animals handled by veterinarians include elephants, camels, llamas, buffalos, ostriches, and similar oddities. Finally, veterinarians and zoologists here and there share an interest in diseases of turtles and other reptiles, of fish, and of similar lower vertebrates. For the most part, the diseases of molluscs, insects, and other invertebrates have been handled by zoologists, but the indications are that the veterinarian of the future will have to be a zoologist as well as a veterinarian to take care of the expansion of the veterinary field over the zoological field.

As a result of the variation in the types of patients with which the veterinarian deals, the tendency among practicing veterinarians today is not along the line of specialization in fields of medicine, such as surgery, obstetrics, internal medicine, gastro-enterology, or infectious diseases, but along the line of specialization in dealing with certain types of patients, such as cattle or poultry. This is a natural development when one considers the variation in these patients; that the normal temperature of a bird would be a febrile temperature in a horse, that sheep and cows have four stomachs whereas horses and pigs have one, that horses and pigeons do not have gall-bladders whereas most vertebrates do have them, that horses have a relatively enormous development of the large intestine, which predisposes them to colic, and that almost 100 per cent of adult horses have aneurisms of the anterior mesenteric artery caused by worms, which aneurisms contain thrombi serving as a source of colic-producing emboli, that bears do not have a cecum, and all the other features of comparative anatomy which provide studies for the zoologist and pitfalls in pathology for the veterinarian.

Modern transportation has developed to the point where the veterinarian's patients are moved in large numbers over long distances, but it is still much easier to get a human patient to hospital than to get the veterinarian's patients to hospital, and for this and other reasons the veterinarian still does most of his work in the field at the homes of his clients rather than at a hospital. For this reason and for

other economic reasons the veterinarians form fewer clinics and surgical groups, and use laboratory methods to a much less extent than do physicians.

Basic Differences in Human and Veterinary Medicine

One of the basic differences between human and veterinary medicine is that sentimental, esthetic and cosmetic considerations play a much greater part in human medicine than in veterinary medicine, whereas economic considerations are the dominant considerations in veterinary medicine. It is true that the human patient is quite generally animated by an economic motive in consulting a physician to get rid of a disabling ailment that terminates or lessens the patient's earning power, but even if the economic status of the patient is that of a dependent without earning power, as in the case of a child or a senile relative, the sentimental motive is active in impelling persons to call for medical assistance. The esthetic importance of halitosis and bromidrosis will sometimes send a patient to a physician regardless of the economic importance of these things in the field of employment. Disfiguring conditions, even the matter of ten pounds overweight, may be brought to the attention of the physician.

In the veterinarian's practice such considerations play a minor role. It is true that the family dog will often receive all the veterinary service that can be given it, purely from sentimental motives and regardless of whether the dog is a valuable purebred or a "mutt" of no sale value whatever, but as regards animals in general the veterinarian must habitually salvage an economic value in excess of his fee or in default of this he will find himself without a practice. The farmer will pay five dollars to save a cow worth fifty dollars, but he will not pay fifty dollars to save it or pay five dollars on very many occasions if he loses the cow. In other words, the veterinarian must be, above all things, practical; if he is practical he may then be as scientific as he desires. He must salvage food animals and milk supplies, increase the working capacity of horses, and correct unthriftiness. As part of this role in economic production he develops a practice in such operative fields as castration and spaying, a field in which the physician has much less interest.

The field of nervous and mental diseases is naturally much more important in human medicine than in veterinary medicine since the nervous system of the human animal has distinctive features which separate man from all other animals. The veterinarian's patients manifest nervous symptoms of various sorts, but while a few animals behave in a way which is suggestive of idiocy or insanity, the symptoms are commonly associated with acute infectious diseases, progressive intoxications from plant poisoning with associated hepatic cirrhosis, and similar things, rather than with primary dysfunction of the central nervous system.

A striking difference between human and veterinary medicine is the much greater importance of parasitology in veterinary medicine. In human medicine parasitology becomes a matter of everyday practice only in tropical and semi-tropical areas, and then largely because of social and economic conditions under which the general level of sanitation is lowered. Man is a very special case among animals in that he is capable of a degree of sanitary achievement far in excess of what other animals can attain. The use of clothing, shoes, screening, cooked food, bathtubs and showers, sewerage systems, shaving and other things protect man against many parasites. On the other hand, animals other than man do not wear clothing and shoes, can rarely be screened to any great extent against the bites of insects and arachnids, do not eat cooked food but in many cases do feed on pastures or soil contaminated with their feces, bathe rarely so far as most mammals are concerned, and are shaved only in connection with surgical procedures. When we consider that such parasites as amebae and pinworms break through the sanitary defenses thrown around civilized man, it is evident that animals other than man will be successfuly attacked by hordes of parasites. Our sheep are injured by parasites more than by bacterial or virus diseases, and horses harbor extraordinary aggregations of parasites, both as regards kinds and numbers. These parasites cause a steady loss in deaths of young animals and in general produce unthriftiness responsible for great economic loss in all kinds of livestock and in almost all areas.

As a result of this situation the veterinarian

is engaged in a constant struggle against parasites. The limitations in the application of sanitation make prophylaxis difficult, and many parasites must be combated by anthelmintic treatment. These facts have been more and more appreciated in the past fifteen years, and veterinarians have led in the development of anthelmintic medication and have introduced into human medicine some of our generally used anthelmintics. They have devoted much more time to parasites than have the physicians, and a physician who was a victim of a very unusual form of parasitism recently informed me that if a person was suffering from some form of parasitism he had better consult a veterinarian. Taking the average representatives of the two professions into consideration, what he said is probably true. Physicians in general are much less familiar with parasites and with therapeusis in parasitism than are veterinarians.

In one other respect the veterinarian has the advantage over the physician. When one of our animal patients is hopelessly diseased or injured we can resort to a merciful euthanasia by chloroform, a bullet or otherwise to put an end to suffering, and need not prolong a hopelessly wretched period of misery. Moreover, we can do this with the approval of popular opinion, that misguided and uninformed species of tyranny which so commonly frowns upon many progressive and intelligent ideas.

Mutual Interests of Physicians and Veterinarians

As persons concerned with the subjects of anatomy, physiology, pathology and the treatment and prevention of disease, the physician and veterinarian have much in common. This fact is too little appreciated by members of both groups. Probably the appreciation is greatest among the outstanding members of these groups. Osler taught parasitology in the Montreal Veterinary College, and was vice-president of the Montreal Veterinary Medical Association. In Cushing's admirable Life of Osler I find twenty references to veterinary medicine and forty-seven to parasitology. Osler named one species of the parasitic worms in the dog, and I subsequently placed this in the genus Oslerus, naming it after Osler.

Dr. William H. Welch's interest in veterinary medicine may be illustrated by a story told me by Dr. Samuel Buckley. At one time Dr. Welch wanted to see some cases of hog cholera, and after some search Dr. A. W. Clement, State Veterinarian of Maryland, learned of some cases out in the country districts of Maryland. Dr. Welch and Dr. Clement secured a horse and buggy and drove to the place where the sick hogs were supposed to be. The place in question was a farm owned by a negro, who stated that he had had some sick hogs, but they had died and he had buried them in the hog lot. He refused to dig them up and an attempt to hire other negroes to do this digging met with a similar refusal to dig up dead hogs. So Dr. Welch and Dr. Clement borrowed a shovel apiece and went out and dug up the dead hogs in the muddy hog lot. They got down in the grave and cut open the hogs. By this time all the colored brethren in that part of Maryland had assembled two or three deep in a circle about the grave, and one ancient brother in the rear rank leaned forward to look at the spectacle and remarked: "Mah Gawd! Whut some white folks will do foh money!" This illustrates sufficiently the interest which "Popsy" Welch has in veterinary medicine. Incidently, Dr. Welch is an honorary member of the A. V. M. A.

Both human medicine and veterinary medicine depend largely on animal experimentation for basic and essential information. But animal experimentation is a field of veterinary medicine, since the important difference between human and veterinary medicine is in the difference between their patients, man on the one hand and all other animals on the other. Dogs and cats are quite important patients; monkeys, rabbits, guinea pigs, rats, and mice are usually of little importance. The findings from experiments on dogs and cats have immediate value in veterinary practice in many cases, and this is one advantage that the veterinarian has over the physician; he can learn facts of direct application by experiments on animals. Moreover, he can conclude his experiments whenever he needs to do so by killing his experiment animals and making a post-mortem examination, a thing which rounds out his information in regard to certain things in a very advantageous way.

The case is not quite so simple as regards the information which the physician derives from animal experimentation. His information must be adapted to the human patient.

In spite of the contentions of so-called anti-vivisectionists, this adaptation is sometimes very simple and direct. In general the dog is very similar to man in its anatomy, physiology and responses to drugs. Its simple digestive tract is very similar, although it lacks a vermiform appendix. A general rule in veterinary medicine is that the dose of any given drug for a man and for a dog of average size, i. e., a dog weighing about ten kilograms or twenty-two pounds, is the same. The striking exceptions to this rule, well known to veterinarians, are morphine and strychnine; dogs will often survive doses of three grains of morphine and may succumb to 1/60 grain of strychnine. The effective therapeutic dose of carbon tetrachloride for removing hookworms from dogs, experimentally ascertained to be 3 c.c., was suggested as the probable therapeutic dose for man, and this was found in practice to be correct. Hence the findings from experiments on dogs have special value in ascertaining facts in connection with human medicine.

Human and veterinary medicine share a wide field of common interest in connection with the many diseases which attack both man and the lower animals. An entire library could be devoted to this subject. Tuberculosis of man and animals, especially in the relation of milk to tuberculosis in infants and children, is one topic which has been elaborated in volumes of discussion. Rabies and trichinosis of man and animals have had extensive consideration. At present the Brucella infections involving undulant fever in man and its sources in cattle, goats, and swine are receiving the attention of physicians and veterinarians alike. It is unnecessary to stress these things, but it is worth while mentioning that new interchanges of disease agents between man and the lower animals are still taking place and may be expected to continue for a long time. It will be recalled that tularemia was first found by McCoy in a ground squirrel, and that the disease in man evidently represents a rodent disease which has moved up to occupy an important status as a disease of man. Rocky Mountain spotted fever is probably a similar case. Every year we find in man parasites never previously known from man but known from monkeys, carabao, sheep, swine or other lower animals. Similarly we find from time to time such things as a swine hookworm which is evidently a porcine strain of the human *Necator americanus*, or a human ascarid in a rodent, or some similar thing indicating that in a more crowded world with altogether new forms of rapid and generally used transportation we are exposing ourselves to the diseases and parasites of the remainder of the animal kingdom, and exposing that animal kingdom to our diseases and parasites. Here is an important overlap in the interests and activities of the two medical professions. One cannot say that these subjects which fall in both fields of medicine are the concern of the physician or the veterinarian; they are the concern of both.

It follows from the above facts that the physician and veterinarian have a cooperative role in the control of many diseases and parasites, especially in matters of public health. The veterinarian has a definite function with special training for that function in the work of meat, milk and dairy inspection. I have occasionally seen physicians and butchers undertake the role of meat inspector or dairy inspector, but physicians who are competent in their role as physicians usually recognize the need of training in such work and prefer that the veterinarian, trained for such work, conduct meat and dairy inspection. A performance which I have seen and which I fear is somewhat characteristic is one given by a meat inspector, not a veterinarian, who habitually went to the abattoir, said "Good morning" to the butchers, took his paper to the outdoor loading platform and read it while the slaughtering went on, and after all the viscera with their tell-tale lesions of disease were safely shoveled in the tank and the carcasses hung in the cooler, took his stamp and stamped "Inspected and passed" on the carcasses, and returned to his office.

Relatively speaking the average physician is a bit "high hat" and "kid glove" by comparison with the veterinarian. The former has little taste for the mucky business of the slaughter-house and the stable. He does not care to be seen actually inspecting garbage cans in an alley. On the other hand, the veterinarian is trained for such work and takes it as part of his job, just as he works at the business of hauling a heavy calf from a cow in a dystocia case in a dirty stable at midnight with a temperature well below freezing, or castrates a vicious broncho. I am well aware

that the physician has his unpleasant experiences with gangrene, uremia, insanity and similar things, but you know about these things and probably are much less familiar with the veterinarian's activities.

The Relations Between Physicians and Veterinarians

Physicians and veterinarians should maintain closer contacts than they do maintain in the United States. In general the two groups are more intimately associated in Europe than in this country, as might be expected from the fact that trained veterinarians are somewhat recent developments here. In this country the first class of veterinary students with a four years' course graduated in 1916, since which time all veterinary colleges have given a four years' course.

Of what benefit would this relation between physicians and veterinarians be to the groups involved? So far as the veterinarian is concerned, he derives much of his present knowledge from developments in human medicine. New surgical technique, new instruments and apparatus, new drugs and biological preparations, and new ideas are rather rapidly transferred from the field of human medicine to the field of veterinary medicine whenever the practical limitations of economic utility make the transfer possible. These transfers would be expedited to the benefit of the veterinary profession if the veterinarian had closer contacts with the physician.

How would the physician benefit? As already indicated in this paper, the control of the many diseases and parasites which man shares with domesticated and wild animals calls for the cooperative effort of both medical groups, and cooperation is difficult of attainment except as it is based on a cooperative spirit arising from mutual acquaintance and mutual interest. In the field of animal experimentation the physician could profit in many cases by consulting a veterinarian as to the facts known in veterinary medicine in regard to the experiment animals and their reactions to the diseases, drugs or other things with which the physician desires to experiment. There are certain procedures in the restraint of animals and the methods of handling them which are familiar to veterinarians but not to physicians. Sheer necessity has led the veterinarian to develop certain procedures of which the physician never hears, but which would be of use to the physician under certain circumstances. Finally, all the facts in medicine interlock and correlate, and with a growing volume of facts far beyond the comprehension of any individual it is obviously advisable to utilize the united effort of all informed persons to solve medical problems by pooling all available resources.

Bureau of Animal Industry.

PITYRIASIS SIMPLEX CAPITIS—DANDRUFF.

By RUSSELL FIELDS, M. D., Washington, D. C.
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Much has been written on the subject of dandruff, and most every physician, whether he be a general practitioner or specialist, has his pet prescription and ideas on the subject. Unfortunately, the charlatan and would-be lay scalp specialist give the public the impression that they know more about the scalp than the physician. Advertising of the most expensive type puts their program across.

True enough, there are numerous good remedies for the simpler forms of dandruff. The more severe types, more commonly known as seborrhoea capitis or seborrhoeic eczema of the scalp, present more taxing problems and frequently require more than the ordinary type of lotion to cure. To be sure the word "cure" as applied to dandruff does not mean that the patient may not have the disease again, but it does mean that the periods of remission are greatly lengthened. There are many individuals, however, who are never troubled once the dandruff is eradicated. The relationship of dandruff to the general health to be sure is a vague one, but there is without a doubt some connection. Vinna, Merril, Duffy and others have concluded after careful experimental work that "the cause of seborrhoea seems to point to a coccus that is arranged in diplococcus or tetracoccus formation." Its classification seems to be between bacteria and yeasts. They likewise believe it to be transmissible.

Dandruff may occur in hair that is either oily or dry, blonde or brunette, and young and old are alike subject to the disease. These factors must be taken into consideration in the choice of a prescription in each case.

The matter of shampooing the scalp resolves itself into a problem of personal opin-

ion. Very eminent physicians differ considerably as to frequency. Suffice it to say that the scalp should be washed frequently enough to be made clean. The more oily the scalp, the more frequently it should be washed, and an arbitrary length between shampoos would appear to be about two weeks. When the hair is dry, certainly this is a sufficient interval, and following the cleansing of the scalp the inunction of cocoa butter, olive oil, caster oil, or almond oil should prove helpful. On the other hand, when the scalp is oily, the use of tincture of green soap or a good grade of tar soap appears to be the most beneficial. Tincture of green soap does not give much of a lather, but it may be supplemented by any other soap during the shampoo. The alcoholic content in the various lotions used on the scalp will help keep down the oiliness. Ultra-violet light, if taken once or twice a week over a period of several weeks, is a useful adjunct in therapy of oiliness. A frequent method among barbers and cosmeticians is the use of a hot olive oil shampoo to remove dandruff. A careful examination of numerous patients who have used this method has led me to believe that its results are extremely temporary—no better than an ordinary cleansing soap-and-water hair wash.

A frequent observation in dandruff is that the hair not only falls but comes in finer. This is due to the dandruff blocking up the small hair orifices, causing a diminution in the diameter of the aperture through which the hair passes.

In the severe types of seborrhoea capitis and the persistently recurring types of milder seborrhoea, X-ray therapy given according to the Keinboch-Adamson technique offers an effectual and more permanent means of removal of the condition. The application of one-quarter unit is given over five areas. This is repeated in one week, followed in ten days by one-eighth unit over the same areas. No other treatment is given for at least one month, at which time the treatment may be repeated if necessary. No local applications are used during this time. Although I realize that some may feel this to be radical therapy, I have seen none but good results from its use when carefully carried out. In the case of blonde hair, the intervals may be made two weeks instead of one. In fact, X-ray in mild doses is known to be stimulating to the growth of hair. When this therapy is followed by suitable mildly stimulating and cleansing hair tonics and proper shampooing of the scalp the results are quite gratifying. In men where salves would be more indicated than lotions for severe cases, X-ray offers a much more satisfactory means of treatment, saving the patient considerable inconvenience. Another means of attack in these cases is the air cooled mercury-vapor quartz light. It is impossible to state a proper dosage due to the variation in strength of different lights, but suffice it to say that the amount of ultra-violet should be heavy, and in general the scalp will tolerate a considerable amount. Infra-red in mildly stimulating doses would seem to me to be another excellent adjunct, although I have had little experience with its use in seborrhoea. The value of ultra-violet light in dandruff lies chiefly in its use after the scales have been removed by other means.

It is well known that medicines to be taken internally cannot be administered without due respect to their palatable qualities. Likewise, ointments and lotions should be compounded in as pleasing a manner as is compatible with their therapeutic efficiency. Let us consider a skeletal prescription with its possible modifications:

Dry Scalp With Dandruff

Hydrargyri chloridi corrosivi	gr. iii
Spts. vini (50%)	oz. iv
Resorcin or Euresol	dr. i—dr. ii
Olei ricini	oz. i—oz. ii
Spts. odorati	dr. i
Aquae q. s. ad	oz. viii

Oily Scalp With Dandruff

Hydrargyri chloridi corrosivi	gr. iii
Spts vini (70-80%)	oz. iv
Resorcin	dr. i—dr. ii
Spts. odorati	dr. i
Aquae q. s. ad	oz. viii

Of course this prescription may be varied in several ways:

1. Spirits of myrcial (bay rum) may be substituted for 50 per cent alcohol if one desires that particular scent.

2. Salicylic acid, 3 to 6 per cent, may be substituted for resorcin, the latter substance being inadvisable for use in gray or blonde hair.

3. Olive oil may be used in place of castor oil.

4. Liquor carbonis detergens for its stimulating properties may be used two to three drams to an ounce mixture.

There are times when the doctor or his patient prefers the use of a salve. This is especially true in the male or when one is traveling. It is likewise more suitable in the more severe forms of seborrhoea when it is necessary to incorporate stronger ingredients to produce the desired effect.

For simple dandruff, Howard Fox advocates the following:

Sulphur ppt. ----------dr. i
Ung. aquae rosae ----------oz. i
Sig: Rub on scalp each night.

Likewise, this prescription may be varied.

1. Oil of cade, 10 per cent, may be added for its stimulating properties.

2. Salicylic acid, 5 to 6 per cent, may be used to produce stimulation and exfoliation of existing scales. Salicylic acid is likewise parasiticidal.

It might be well at this point to bear in mind that compounds of sulphur and mercury used together or alternately are incompatible and will form black mercuric sulphide.

A lotion of an entirely different nature used by McCarthy with marked success is as follows:

	Weak	Moderate	Strong
Sulphur ppt.	10.	10.	10.
Carbon disulphide	90.	150.	200.
Carbon tetrachloride	210.	150.	100.

Misce et signa: Use as directed.

The directions should be specific:

Separate hair well. Moisten cotton ball and friction quickly over entire scalp. A burning sensation is produced which disappears on evaporation of this very volatile liquid.

Disadvantages:

Disagreeable odor, though not lasting.
Inflammable.

Advantages:

Leaves absolutely no precipitate in the scalp or hair.
Results excellent.

BIBLIOGRAPHY

Duffy, Francis M.: The Bacterial Etiology of Seborrhoea, *Arch. Dermat. & Syph.*, 20:3, Sept., 1929.

Merril, W. H.: The Diplococci Seborrhoea. *New York State J. Med.*, 66:490, 1897.

Van Horn: Micro-Organism bij Seborrhoea, v. h. Nederl, *Nat. en Geneesk Conj. Harlem*, 1895, p. 494.

Schamberg, J. F.: The Microbacillus of Seborrhoea, *J. Cutan. & Gen. Urin. Dis.*, 20:99, 1902.

McCarthy, Lee: Histopathology of Skin Diseases, Mosby, 1930.

Fox, Howard: Diseases of the Skin in Infancy & Childhood, Appleton, 1930.

Hazen, H. H.: Diseases of the Skin, Mosby, 3d ed.

Columbia Medical Building.

DISLOCATION OF THE KNEE WITH RUPTURE OF THE POPLITEAL ARTERY AND VEIN: REPORT OF CASE.

By RANDOLPH L. ANDERSON, B. S., M. D., Richmond, Va.

Dislocation of the knee is uncommon. However, fairly large series of cases have been reported. Cramer in 1895 reported 295 cases. Hardonini reported seventy-four cases in seven of which gangrene occurred and amputation followed. Weissner reported twenty-nine cases. These are the largest series we have been able to find in the literature. It is generally agreed that this dislocation is much less common than dislocation of the shoulder, elbow or hip.

There are five types of dislocation of the knee, namely, anterior, posterior, mesial, lateral and rotary. These terms are used to describe the position of the leg with reference to the femur. Dislocations in the antero-posterior and lateral planes are about equally common. Fractures are common in dislocations in the lateral plane and uncommon in dislocation in the antero-posterior plane. Injuries to vessels occur only in antero-posterior dislocations.

Posterior dislocations are more common than anterior dislocations. However, rupture of the popliteal artery occurs more commonly in anterior dislocations. There have been only six cases of rupture of this vessel in posterior dislocations.

Dislocation of the knee occurs only as a result of severe violence. This may be in the form of a wrenching or violent blow or a leverage strain. It may occur as a result of the leg being caught in a rotating wheel, as was true in the author's case, or it may occur from falling into a hole while running.

It is probable that the popliteal artery is susceptible to rupture in dislocations of the knee because of its anatomical fixation. Lipshutz, in a recent paper, discusses this subject. The popliteal artery is close to the bone and is fixed proximally by the adductor magnus tendinous arch. Distally, the artery is fixed by the tendinous arch of the soleus and by the anterior tibial artery as it passes through the interosseus membrane. So the mechanism of the rupture has been compared to that of a taut string.

Stoppard discusses the possibility of collateral circulation and goes into the causes of the frequent occurrence of gangrene after rupture of the popliteal artery. He states that after occlusion of the popliteal artery blood passes from above the patella anaestomoses through

1, descending branch of the external circumflex; 2, anastomica magna; 3, then the nervi ischiadici branch of the sciatic; 4, the perforating arteries. If obstruction is distal to or at the level of the origin of the articular branches of the popliteal, the blood can only reach the leg and foot through the two recurrent branches of the anterior tibial artery.

Makin found gangrene in 20 per cent in injuries of the upper one-third of the popliteal, in 40 per cent of the mid-portion of the popliteal, and in 35 per cent of the lower popliteal.

The popliteal vein is frequently severed also conjointly with the popliteal artery. The inner walls of the artery alone may be injured causing a thrombus and resulting in gangrene. The crucials, the internal and external ligaments, and posterior ligaments and the hamstrings are frequently injured in dislocation of the knee. The sciatic nerve may be severed or else the tearing and ecchymosis may lead to trophic changes. The diagnosis of dislocation is usually easy. In cases with complete dislocation, deformity is great. There is usually extreme abnormal mobility and total functional disability. X-rays should be taken to rule out fracture, especially in lateral dislocation.

The vessels and nerves should be carefully tested. Swelling in the popliteal space and in the calf muscles and lack of pulsation in the anterior and posterior tibials is strong circumstantial evidence of rupture of the popliteal artery.

It is usually necessary to use general anesthesia to reduce dislocations of the knee. However, at times, rupture of the knee ligaments is so complete that reduction is very easy. Reduction is carried out simply through the use of traction and countertraction, applied according to the variety dealt with. A plaster cast should be applied following reduction and worn for six or eight weeks and then weight bearing should be gradual and protected.

In the presence of a hematoma of the popliteal space with absence of pulsation in the anterior and posterior tibials, probably the safest procedure is to explore immediately. Conservative treatment is perhaps not so safe.

What should we do if we explore and find the popliteal artery ruptured? If the rupture is minute, arteriorrhaphy may be attempted, although it has proven successful only rarely. Ordinarily, ligature of both the artery and vein is considered the best procedure. The best opinion seems to be that ligation of the vein along with the artery helps to maintain capillary pressure more efficiently. If the vein is ruptured along with the artery, of course, both must be ligated.

In uncomplicated cases of dislocation of the knee, the prognosis for excellent funtion is good. The Washington State Department of Labor stated that the average of total disability was 25.1 days and 83.9 days partial disability in these cases.

However, cases complicated by rupture of the popliteal bear a different burden. In cases with ligation, gangrene occurs in about 35-40 per cent and in cases without ligation this percentage is even higher. The danger to life is not great except in compound fractures, which frequently become infected. Shock may be great in these cases and death has resulted in some cases.

A colored man, E. Q., age thirty-two years, was brought into St. Philip Hospital on April 21, 1928, following an injury to the left leg. His left foot and ankle had been caught in a concrete mixer and his leg had been severely twisted before the machine could be stopped. He was brought to the Hospital within a few minutes after the accident.

Examination showed a fairly well developed and nourished colored man, who was in considerable pain. Pulse was 70 and of good quality. He appeared to be in mild shock. There was evidence of fracture of the left ankle and lower leg. Deformity was marked and there was backward tilting of the foot. An emergency pillow and side splint was applied and X-rays of the lower leg were ordered. The roentgenographs showed a fracture of both bones in the lower one-third of the leg, the fracture of the tibia being comminuted and extending into the joint. There was also a fracture of the upper fibula. We saw him about two hours later and he was sent to the operating room. At this time, patient complained of numbness in his toes. General anesthesia was given and the emergency splint was removed. Examination showed a severe crushing injury to the lower left leg with forward angulation of the tibia and backward displacement of the foot. Crepitus was easily elicited in the comminuted tibia. The calf of the leg was considerably swollen, evidently

by a large hematoma. No deformity was visible in the knee, except that the lower leg was slightly posterior, but the knee joint showed abnormal movement. The knee was extremely free in antero-posterior movement. With the lower leg fully extended on the thigh, the knee could be hyperextended beyond a straight line. This was done gently. On flexion of the lower leg on the thigh, the lower leg could easily be pushed back abnormally. There was also considerable lateral mobility. It was evident that the knee had been dislocated probably backward and that there had been so great a tearing of the crucial and lateral ligaments that the dislocation had reduced itself. There was a moderate swelling in the popliteal space but not so great as in the calf muscles. Neither dorsalis pedis nor posterior tibials had pulsations. The toes of this foot were colder than the opposite foot. An attempt was made to reduce the fracture of the ankle manually, and a plaster cast applied extending from the toes to the groin. An extra amount of sheet wadding was used and the cast was applied more loosely than usual because of the question of circulation in the limb.

The following morning, April 22, 1928, the toes were cold and sensation was absent. He complained of the cast being tight above the knee. The whole cast was bivalved and spread. The hematoma in the popliteal space had apparently not increased in size. His temperature was 101 F. and his pulse was 110 per minute.

On April 23rd, the next day, the toes and about two inches of the distal portion of the foot were cold and numb. He was given continuous dry heat. He complained of pain in this leg which was relieved by opiates.

By April 25th, the area of demarcation of gangrene had extended up the leg to about four inches below the knee. The patient's condition seemed to be growing worse and it was decided to amputate.

It was felt that he had unquestionably a rupture of the popliteal vessel or vessels and a guillotine thigh amputation was performed in the lower one-third. The patient suffered little shock from his operation and was sent to his room in good condition.

The amputated leg was dissected. The whole popliteal space was infiltrated with old clotted blood. The popliteal artery and popliteal vein were both completely severed in the middle one-third and both distal and proximal ends were filled with clots. The ends were separated about one and one-half inches. Both crucial ligaments were torn and the posterior joint capsule was torn longitudinally. Both

Photograph of the lower end of the femur following amputation, showing the posterior aspect of the knee joint:
A. Clamp on proximal end of popliteal vein.
B. Clamp on distal end of popliteal artery and vein, drawn over to the side.
C. Proximal end of popliteal artery.
D. Sciatic nerve, cut in dissecting the joint.

lateral ligaments were incompletely torn. Both menisci were torn and partially displaced. The calf muscles were infiltrated with blood clots. The sciatic nerve was intact. The peroneal and posterior tibial nerves were intact.

The patient's clinical record was fairly smooth afterwards. There was temperature elevation for ten days. The circulation of the stump remained good except that healing was delayed. He was discharged on June 28th, with the stump granulating.

On November 23, 1928, he was returned to

the Hospital because of a chronic osteomyelitis in the stump. Under general anesthesia, several small sequestra were removed and a plastic operation performed on the stump. He was discharged on December 7, 1928, with slight drainage from the middle of the stump. In February, 1929, the stump healed entirely. He is getting along comfortably at this time, with an artificial limb.

BIBLIOGRAPHY

1. Lipshutz, Benj.: *Surgery, Gyg. & Obst.* Vol. 46, 1928, page 62.
2. Stoppard, John S. B.: *British Jour. Surgery.* Vol. 12, 1924-1925, page 92.
3. Platt, Henry: *British Jour. Surgery.* 8:190, October, 1920.
4. Lediard, H. A.: *Carlisle Clinical Journal*, September 28, 1927.
5. Lowe, George: *St. Bartholomew Hospital Reports.* 1869. Page 80.
6. Weissner, K.: Leipzig. 1910.

307 *Professional Building.*

PEDIATRIC ASPECT OF DISEASES OF THE DUCTLESS GLANDS.*

By SAMUEL NEWMAN, M. D., Danville, Va.

The subject of Diseases of the Ductless Glands is surrounded with so many extravagant statements that one must be cautious in discussing it not to touch upon the twilight zone of medical thought and practice. It is a long and tedious task to sift from the vast literature on the subject the really valuable and well established facts. It is my intention to dispose of my task in a brief manner, and to limit my discussion to cases actually met with in practice.

THE THYMUS.—I could easily lighten my task by leaving out from the discussion the thymus gland; for, strictly speaking, it is not definitely known that the thymus is an endocrine gland. However, it is customary to regard the thymus as belonging to the endocrine system.

A tremendous enlargement of the thymus is occasionally seen in a new-born infant which may literally choke when lying in the prone position. The infant has to be held on the hands with the head bent forwards in order to prevent tracheal constriction. The treatment in such cases is X-rayed radiation.

I know of a few cases in infants where attacks of cyanosis with convulsive seizure were due to thymus enlargement. X-ray or fluoroscopic pictures were unmistakable that we were faced with such a condition. Fortunately, exposure to the X-ray, even just for the purpose of diagnosis, is sufficient to affect a cure.

There is nothing in my experience which I could bring to bear upon the controversy whether the thymus plays a role in convulsions and certain spasmodic conditions centering about the respiratory tract. In this respect, as in many other clouded phases of medicine, one may be guided by his personal beliefs. There are two schools of thought; one, that would not venture to subject a child even to a tonsil operation without ascertaining by X-ray examination the presence or absence of thymus enlargement; and the other, who discredit even proved enlarged thymus shadows on the X-ray plate as cause of any clinical syndrome.

THE THYROID GLAND.—Simple enlargement of the thyroid gland without symptoms is rare in children under five years, but it is not uncommon, and occurs with increasing frequency, thereafter until puberty. The incidence in girls is three times that of boys.

Enlargement of the thyroid gland without symptoms at puberty may be considered as physiological. Such cases may be treated with iodized salts or with some organic or inorganic preparation of iodine. I have had many cases of simple goiter in girls at puberty that have gotten well without any treatment. These cases are sporadic and have no reference to the hundreds of cases seen in goitrous regions where systematic treatment with iodized salts is the accepted procedure. Investigators have not yet determined whether or not toxic goiter in the adult is always preceded by simple enlargement of the thyroid during childhood.

HYPERTHYROIDISM.—It has never been my good or ill fortune to see a single case of exophthalmic goiter in a child. Only 5 per cent of all patients with goiter are less than sixteen years old, and no reports of its occurrence in a patient less than three and half years of age have appeared in literature.

Surgical treatment of toxic goiter in children is not generally considered desirable. The permanent destruction of the thyroid gland may cause hypothyroidism. It is stated that if hyperthyroidism is recognized in its early stages and receives immediate medical therapy —which consists of absolute rest in bed, concentrated feeding and X-ray radiation—there

*Read as part of a symposium on Disease of the Ductless Glands before the South Piedmont Medical Society at its meeting in Danville, Va., November 25, 1930.

is little probability that surgical measures will be necessary.

Hypothyroidism.—Certain well defined syndromes are met with in pediatric practice, ranging all the way from mild deficient activity of the thyroid gland down to total absence of the thyroid hormone. When there is a lack of thyroid hormone at a very early age, cretinism is the result. It is not necessary to enter into great detail concerning the signs and symptoms of this condition. Sparseness of hair, slight hoarseness of the voice, thickening of the subcutaneous tissues, abnormal distribution of fat, thickness of the tongue, and a characteristic expression of the eyes, will suggest cretinism, though it is not always easy to distinguish it from *Mongolism*.

Thyroid treatment in cretinism is the classic example of successful gland substitution therapy. The variations in success probably depend upon the degree of thyroid deficiency. I know of a daughter of a prominent physician who had been enabled to attend a university by means of thyroid tablets. Of course, such degree of success is only exceptional.

Myxedema.—Myxedema of children is similar to that of adults. The condition might be described as late cretinism in which the critical period of growth is passed with normal thyroid activity. It is relatively uncommon in young children and, therefore, is left out from my discussion.

Parathyroid.—Hyperparathyroidism can be produced experimentally in animals and in human beings. It is a clinical fact that the administration of parathyroid hormone raises rapidly the calcium in the blood. I have never had any occasion to use parathyroid hormone. The most extreme cases of tetany, which are supposed to have some connection with parathyroid function, can be speedily cured by the administration of cod liver oil, sunshine, ultraviolet rays and proper diet. There is nothing more necessary to say about this gland here from the clinical aspect.

Pituitary.—The most important clinical condition met with in pediatric practice due to a dysfunction of the pituitary is Froehlich's Syndrome or *dystrophia adiposogenitalis*. This is a well-marked clinical entity which may become manifest in early childhood, but it is usually first recognized in older children. Its most important signs are marked obesity which has a female distribution, infantile genitalia, and conical tapering fingers. The mentality may be dull or above normal. This disturbance of the pituitary is supposed to be due in many cases to tumor. All cases under my observation failed on X-ray examination of the skull to reveal enlargement of the sella turcica.

Hypopituitarism, though it produces a definite clinical syndrome, is a very complicated condition which involves the interaction of many glands of internal secretion. It is for this reason that there is a variability in the basal metabolic rate of patients with dystrophia adiposogenitalis. The treatment with anterior lobe of the pituitary gland or with whole pituitary gland has given very good therapeutic results in some cases, but in others it has failed. In very obsese patients it is good to combine the treatment with thyroid extract.

Diabetes Insipidus.—Diabetes insipidus is characterized by great thirst and by the excretion of very large amounts of urine of low specific gravity. It is rare in infancy and early childhood, but is more frequently seen after the tenth year of life.

In its complicated form it is supposed to be due to disturbed function of the posterior lobe of the pituitary gland. Subcutaneous or intramuscular injection of pituitrin is the treatment, though results are not uniformly good. I have recently come across a case of diabetes insipidus in conjunction with bilateral optic atrophy. X-ray of the skull was negative. A diagnosis of pituitary tumor was confirmed at a University clinic.

Addison's Disease (Chronic Adrenal Insufficiency).—Hypofunction of the adrenals is almost unknown in infants, but in later childhood is occasionally seen as a complication of general tuberculosis. However, among the thousands of cases of juvenile tuberculosis which I have seen in Europe during the postwar period, I did not come across a single case of Addison's disease. I, therefore, do not think it necessary to lose many words here on this condition.

Malignant Hypernephroma.—Adrenal carcinoma and sarcoma are not infrequently seen in very young children. I have come across a case in an infant only three months old who died within a month.

Occasionally, one comes across, especially at clinics, cases of precocious sexual development or aberrations in sexual development. These syndromes are due to disturbances or tumor

in the male and female gonads. The only rational therapeutic measure in this field is the administration of the hormone produced by the ovarian follicle. It largely falls within the field of the gynecologist who uses it quite effectively in cases of amenorrhea or oligomenorrhea.

There is a motley group of clinical conditions manifesting themselves by under-development and over-development during the childhood period. The various conditions are described and differentiated morphologically and anthropologically. Very few of these conditions are of any importance to the pediatrist; though it is assumed that they result from dysfunction of the organs of internal secretion.

The market is glutted with mixtures of glandular extracts and some physicians are quite adept in pluriglandular therapy. I fully subscribe to the opinion of this superb clinician, John Lovett Morse, who says:

"I should expect to know as much as to what would happen if I threw a monkey-wrench among the wheels of the universe as I would if I gave a child a combination of glandular extracts."

Correspondence

Beware This Solicitor.

St. Joseph, Mo.,
March 30, 1931.

To the Editor:

On February 23rd, this year, a solicitor victimized a number of physicians in St. Joseph. His plan was to solicit subscriptions to *Harpers* and other magazines and to offer sets of books as premiums. The subscription blank called for the payment of $9.70 in ninety days. He was supplied with blanks, samples of binding and everything to indicate that he was a bona fide magazine salesman.

After he had secured the signature on the subscription blank, he explained in an indifferent manner that if the subscriber cared to pay cash, or by check, there was a discount of $1.00, and the check could be made payable to "Harper Brothers Publishing Co.," the name printed on the subscription blank. The doctors "fell for it" and the next day he cashed the checks at a local bank and departed. He used the name T. T. McLean while here but has also used the name Leroy Dale.

Correspondence with the National Publishers Association, 15 West 37th St., New York, indicates that this person has been defrauding physicians in the Middle West for several months.

E. J. Goodwin, M. D., *Secretary-Editor,*
Missouri State Medical Association.

Woman's Auxiliary, to the Medical Society of Va.

President—*Mrs. J. Allison Hodges,*
5511 Cary Street Road, Richmond.
President-Elect—*Mrs. M. N. King,*
1314 Westover Avenue, Norfolk.
Secretary—*Mrs. J. K. Hall,*
3011 Seminary Avenue, Richmond.
Treasurer—*Mrs. Wm. Branch Porter,*
5125 Cary Street Road, Richmond.

Women at the A. M. A. Meeting, Philadelphia, 8-12 June, 1931.

The Woman's Auxiliary to the American Medical Association has been placed in charge of all entertainment of women visitors, and began its labors on 27 June, 1930, by engaging the whole Roof Garden of the Bellevue-Stratford Hotel for the period of the Convention. All women's activities will centre in this hotel —registration, meetings, luncheons and supper dance, and all excursions will start from the Broad Street entrance. Invitations and tickets must all be procured in the Roof Garden *in advance*, as nothing but programs will be obtainable elsewhere. Members of the A. M. A. are invited to join all excursions, and should register for them in advance in the Roof Garden. Rooms for State Headquarters have also been reserved in the hotel, and sponsors will be appointed to look after all women registered from their own states. The list of sponsors will be printed in the program. We take this opportunity to thank the management of the Bellevue for their generosity in placing all these facilities at our disposal free of charge. The chairman of the Women's Hotel Committee is Mrs. Frederick S. Baldi, 2117 Porter Street, Philadelphia, who will be glad to make any desired reservations.

The Convention will open with a subscription buffet luncheon in honor of all National Auxiliary Presidents from Mrs. Red to Mrs. McGlothlan, immediately followed by three round tables of thirty-five minutes each, with

ten-minute intermissions, each under expert leadership. The subjects will be:

1. Programs for County Auxiliary Meetings.

2. The Technique and Value of a Committee on Public Relations.

3. History and Archives.

These informal gatherings will be a sort of preliminary canter, designed to bring together those interested in special phases of Auxiliary work and give them opportunity to discuss the subject thoroughly during the following days. The National Board dinner and pre-convention meeting are scheduled for Monday evening.

A new and, we hope, helpful feature will be a Question and Suggestion Box to which we beg all with good ideas to contribute. This seems the most practical way of finding out what our members want continued, what discarded, and what plans are indicated for the future.

The regular business sessions will be held on Tuesday and Wednesday mornings. National Chairmen will be allowed ten minutes for their reports, State Presidents three minutes. Reports to be printed may be as long as desired (in reason), but let no one reporting on the floor imagine these limits an idle jest. Nor will the hours announced on the program be found to mean "about." Have your watches cleaned and regulated, and practice your wrist drill before leaving home. You will need it.

Thursday morning too will be a busy one, the post-convention Board meeting, a special meeting for State and County treasurers desiring further elucidation of the treasurers' receipt blanks, and at 10:30 an informal round table presided over by the new president, the subject, "What Have I Gotten Out of the Convention?" At this meeting Mrs. McGlothlan will announce her committee chairmen and outline her plans for the coming year, and the subjects in the Question Box will be discussed, a sort of stock taking, closing the year's business and opening the new books.

Philadelphia as a historical and cultural centre is the keynote of the entertainment planned for our guests. Except Monday, all afternoons and evenings will be devoted to pleasure, and a variety of excursions is offered to suit all tastes, all physiques, and all weathers. They include bus trips to Valley Forge and to Longwood, the beautiful estate of Mr. and Mrs. Pierre S. duPont, a boat trip on the Delaware, and visits to the Fairmount and Rodin Museums and to the Historical Society of Pennsylvania. The Museum authorities are delighted to provide docent service for those desirous of more than a passing glance at their treasures, and the Historical Society will arrange a special exhibition for the week, including portraits, prints, and engravings, documents, silver, etc., from its unsurpassed collection of Americana. There will also be a brief historical address by Dr. Charles W. Burr, of Philadelphia.

Wednesday will be a field day,—the big Auxiliary luncheon, with guests and speakers from the A. M. A. and a beautiful musical program, the gift of the Delaware Auxiliary. In the afternoon the Philadelphia County Medical Society invites the women to be their guests on a bus trip through historic Philadelphia (a ten minute stop at Independence Hall), Fairmount Park and Germantown to "Stenton," where the New Jersey Auxiliary invites us all to tea. "Stenton," the home of James Logan, Penn's friend, Secretary of the Colony, still stands just as it was built in 1728, the furniture of the period, the garden laid out as described by contemporaries. On Wednesday evening the Pennsylvania Auxiliary invites all visiting ladies to a reception in the superb Chinese Rotunda of the University Museum, a setting probably unsurpassed in any museum anywhere.

This meeting of the A. M. A. in Philadelphia is the first in thirty years, and the County Medical Society, desiring to mark so auspicious an occasion, and also in appreciation of the work of the Auxiliary, invites all members of the A. M. A. and the visiting ladies to be their guests at a supper dance in the Ball Room of the Bellevue, following the big meeting of the A. M. A. on Tuesday evening at the Academy of Music. The President's ball at the Benjamin Franklin Hotel on Thursday evening, to which all are invited, will close the formal festivities.

To those still able to rise from their beds on Friday morning there are offered a tour of Wanamaker's with luncheon in the Crystal Tea Room, or an all-day bus trip to Atlantic City, where the New Jersey Auxiliary will meet them for luncheon at the Claridge. This

program includes also a visit to the new Convention Hall, an hour in a chair on the Boardwalk and plenty of time for window shopping or a swim.

And finally, every day and all day there will be a booth in the Roof Garden inscribed "As You Like It"—anywhere, where those wishing to golf, shop, go to Garden Days, or carry out any other pet project not elsewhere provided for may find information and assistance in making a profitable use of their opportunity.

Will you not reward our efforts by the largest and most enthusiastic women's attendance in the history of the American Medical Association?

CORINNE KEEN FREEMAN,
General Chairman,
(MRS. WALTER JACKSON FREEMAN).

All women attending the Convention, whether Auxiliary members or not, are invited to participate in this entire program

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION
NINTH ANNUAL MEETING
PHILADELPHIA, JUNE 8-12, 1931
Headquarters, Bellevue-Stratford Roof Garden
Registration Hours, Daily 9 A. M. to 5 P. M.

All Meetings Will Begin Precisely at the Hour Indicated. Please Be Prompt.

PROGRAM

Monday, June 8

12:30 P. M.—In Honor of National Presidents, 1922-1932.
Buffet Luncheon, Subscription. Roof Garden.

2:00 P. M.—Three Round Tables, thirty-five minutes each, ten-minute intermissions. Roof Garden

Subjects

1. Programs for County Auxiliary Meetings.
2. The Technique and Value of a Committee on Public Relations.
3. History and Archives.

6:30 P. M.—Board Dinner, subscription. Red Room.
7:30 P. M.—Board Meeting. Red Room.

Tuesday, June 9

9:00 A. M.—General Meeting. Roof Garden.
12:30 P. M.—Luncheon (Bellevue Special). Roof Garden.
1:30 P. M.—*Bus Trip to Valley Forge.
Tea in Log Cabin.
Hostesses, Berks, Chester, Delaware and Montgomery Co., Pa., Auxiliaries.

or

1:30 P.M.—*Boat Trip on Delaware River, Tea on Board.
Hostesses, Bucks Co., Pa., Burlington, Camden and Gloucester Co., N. J., Auxiliaries.

or

2:00 P. M.—Visit to Historical Society of Pennsylvania, 1300 Locust Street.
Special Docent Service
Brief Address by Dr. Charles W. Burr, of Philadelphia: "The Daily Life of the Colonial Physician."
Special Exhibitions on view throughout the Convention.

8:00 P. M.—General Meeting of A. M. A., Academy of Music.
10:00 P. M.—Supper Dance. Bellevue Ball Room.
Hosts, The Philadelphia County Medical Society.

Wednesday, June 10

9:00 A. M.—General Meeting and Election. Roof Garden.
12:30 P. M.—Auxiliary Luncheon. Subscription. Rose Garden.
Guests and Speakers from A. M. A.
Music by courtesy of the Delaware State Auxiliary.

2:30 P. M.—Bus Trip through Historic Philadelphia, Fairmount Park and Germantown.
Hosts, The Philadelphia County Medical Society.
Tea at "Stenton."
Hostesses, New Jersey State Auxiliary.

8:30-11 P. M.—Auxiliary Reception. University Museum.
Hostesses, Pennsylvania State Auxiliary.
Music. Special Docent Service.

Thursday, June 11

9:00 A. M.—Board Meeting. Red Room.
10:00 A. M.—Meeting for All State and County Treasurers. Roof Garden.
10:30 A. M.—General Round Table. Roof Garden. Subject. "What Have I Gotten Out of the Convention?"
Opening of Question and Suggestion Box.
12:00 M.—Luncheon (Bellevue Special). Roof Garden.
1:00 P. M.—*Bus trip, "Longwood." Estate of Mr. and Mrs. Pierre S. duPont.

or

2:30 P. M.—*Visit to Fairmount and Rodin Museums. Special Docent Service.
9:00 P. M.—President's Ball. Benjamin Franklin Ball Room.
Hosts, American Medical Association.

Friday, June 12

9:30 A. M.—†Bus Trip to Atlantic City, including Visit to Convention Hall, Ride in Wheel Chair (one hour).
Luncheon at the Claridge. Atlantic City Auxiliary in charge.
Return at 5 P. M. or 10 P. M.

or

11:00 A. M.—Trip through Wanamaker's, with Luncheon in Crystal Tea Room.

*Bus transportation paid by members.
†Inclusive price, $5.00.

"AS YOU LIKE IT"

Daily from 9:00 A. M. to 5:00 P. M., arrangements may be made at this Booth in the Roof Garden, for golf, shopping, or any special trips desired, e. g., Historic Churches, Fairmount Park Mansions, Suburban Gardens, etc.

All tickets and invitations must be *procured in advance* in the Bellevue Roof Garden. Only programs will be obtainable elsewhere.

Necessity for State-Wide Adoption of Pre-School Examinations.

The following letter was recently sent to Auxiliary leaders and many others throughout the State:

For several years the Woman's Auxiliary to the Medical Society of Virginia has advocated as one of their main objectives the annual examination of children by the family physician. Recently the Medical Society of Virginia, through its Child Welfare Committee, in cooperation with the Pediatric Society, the State Department of Health, and the State Department of Education, has worked out a plan to have every child entering school go to his family physician for an examination and any treatment he may give or advise.

In helping to put on this program you will not only render the State a great service, but it will be of educational value in our efforts to make popular the annual physical examination of adults.

We are enclosing herewith a folder, *Beginners' or Preschool Program*, which we hope you will carefully read and do what you can to further this procedure in your community if it has not already been done.

This program is being promoted not only in several of the large cities over the State, but in towns and even in communities where there are only one-room schools. If it is not being sponsored in your community, we would appreciate your letting us know the reason, and how we can best help you or others to get it started.

Thanking you for a prompt reply, I am,

Very sincerely yours,

MARY GRAY HODGES,

(MRS. J. ALLISON HODGES), *President.*

Woman's Auxiliary to the Medical Society of Virginia.

Replies to this letter have been most gratifying. It is hoped that all readers of this letter may do what they can for the furtherance of this work and advise Mrs. Hodges of any activity. Urge YOUR DOCTOR to take an interest in promoting this plan for the preschool examination by the family doctor of the children in your section.

Another Auxiliary Reported.

Word has recently been received that there is now a Woman's Auxiliary to the Wise County Medical Society. Wives of most of the doctors in that County have been enrolled as members and the meetings have so far been enthusiastically attended. Mrs. R. P. Stock, Stonega, is president of this Auxiliary, and Mrs. B. C. Henson, of Roda, at one time operating nurse at Sarah Leigh Hospital, Norfolk, is secretary.

Woman's Auxiliary to the Norfolk County Medical Society.

At a recent executive meeting of this Auxiliary, it was voted to present $1,500 to the Tidewater Tuberculosis Hospital Association to endow a bed in the proposed Tidewater Victory Memorial Sanatorium, and thus became the first organization in the county, and so far as is known, in the Tidewater association, to provide for a bed. The money was raised from the three card parties held in February by the Auxiliary.

Plans were also outlined for three important objects for April, as follows: Pencil Day to be conducted by the Woman's Auxiliary of the Norfolk Protestant Hospital on April 20th for the benefit of the hospital; Cooperation with the committee in charge of the campaign, to begin April 13th, for the benefit of the Children's Home of Virginia; Extensive work by the committee in charge of the perpetual libraries for the hospitals and welfare organiations in Portsmouth and Norfolk, the campaign lasting from April 6th to April 13th.

The Truth About Medicine

In addition to the articles enumerated in our letter of February 28th, the following have been accepted:

Ciba Company, Inc.
- Nupercaine—Ciba
  - Ampules Buffered Solution of Nupercaine—Ciba, 2 c.c., 1:200.
  - Ampules Solution of Nupercaine—Ciba, 5 c.c., 1:1,000.
  - Solution of Nupercaine—Ciba, 2%
  - Tablets Nupercaine—Ciba, 50 mg.

Lederle Laboratories, Inc.
- Refined and Concentrated Antipneumococcic Serum, Type I—Lederle.

Mead Johnson & Co.
- Mead's Powdered Brewer's Yeast.

Schieffelin & Co.
- Schieffelin Psyllium Seed

Swan-Myers Company
- Mixed Grass Pollen Extract—Swan-Myers.
- Russian Thistle Pollen Extract—Swan-Myers.

NEW AND NON-OFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Non-official Remedies:

Pollen Extracts—Arlco.—The following pollen extracts—Arlco (New and Non-official Remedies, 1930, p. 29), have been accepted: Birch Mixture Pollen Extract—Arlco; Maple Mixture Pollen Extract—Arlco; Oak Mixture Pollen Extract—Arlco. Arlington Chemical Co., Yonkers, N. Y. (Jour. A. M. A., March 7, 1931, p. 773).

Iopax.—Sodium 2-oxo-5-iodopyridine-N-acetate. Iopax contains from 42 to 43.5 per cent iodine. It is

proposed for use intravenously in radiographic visualization of the urinary tract. It is also used for injection into the renal pelvis through the ureteral catheter for pyelography. The maximum intravenous dose is 30 Gm of the powder dissolved in 100 c.c. of redistilled water. Schering Corporation, New York. (Jour. A. M. A., March 14, 1931, p. 859).

Nupercaine—Ciba—*a*-butyloxycinchoninic acid, 7-diethylethylenediamide hydrochloride Nupercaine was first introduced as percaine. Nupercaine is a local anesthetic, acting like cocaine when applied to mucous surfaces and like procaine or cocaine when injected, the action being relatively prolonged. Nupercaine is about five times as toxic as cocaine when it is injected intravenously into animals, and its anesthetic activty is correspondingly greater than that of cocaine when it is applied to a mucous surface; it is many times more active than procaine hydrochloride when it is injected subcutaneously. It is reported to have caused necrosis of tissue in one case and a condition resembling gangrene with recovery in another. Death has been reported after the subcutaneous injection of 135 c.c. of a solution of 1 in 1,000. The usual precautions should be observed when it is injected into the spinal canal or into the urethra. Nupercaine is supplied in the form of crystals; ampules buffered solution 2 c.c., 1:200; ampules solution 5 c.c., 1:1,000; solution 2 per cent, and tablets, 0.05 Gm. Ciba Company, Inc., New York. (Jour. A. M. A., March 21, 1931, p. 946.)

FOODS

The following products have been accepted by the Committee on Foods of the Council on Pharmacy and Chemistry for inclusion in Accepted Foods:

Knox Plain Sparkling Gelatine (No. 1) (Charles B. Knox Gelatine Company, Inc., Johnstown, N. Y.) An unflavored, unsweetened granular gelatin. Knox gelatine is not chemically bleached nor does it contain preservatives. Strict sanitary control is exercised in the manufacture. The composition is: moisture, 13 to 14 per cent; ash, 1 to 1.2 per cent; protein, 85 to 86 per cent; fat, 0.1 per cent; arsenic as As_2O_3, 0.6 parts per million; copper as Cu. 2.5 parts per million. Knox gelatine contains no sugar or added flavor. It is one of the most readily digested proteins.

Knox Sparkling Gelatine (No. 3) (Charles B. Knox Gelatine Company, Inc., Johnstown, N. Y.) This product is essentially the same as Knox Plain Sparkling Gelatine No. 1. Each carton contains two envelopes of Knox Plain Gelatine and one envelop of fruid acid (citric acid). The citric acid is intended for admixture with the gelatine in various recipes. (Jour A. M. A., March 14, 1931, p. 861).

PROPAGANDA FOR REFORM

Death from Explosion of Mixture of Anesthetic Gases.—It has been two years since, at Evansville, Ind., a tank containing nitrous oxide exploded, killing an anesthetist. Last month a patient died on the operating table in Los Angeles because of the explosion of an anesthetic mixture. Yet the hazard from an explosion of anesthetics is probably less than that of fatally persistent hiccup. It has been pointed out that surgeons and anesthetists need far more to utilize means to prevent postoperative pneumonia than to worry over the hazards of explosions, except of course explosions due to carelessness. In the case of the Los Angeles accident, the patient was given nitrous oxide and oxygen, followed by ether. It has been pointed out repeatedly that a mixture of these gases is explosive. Explosions recorded heretofore appear to have been due to sparks from discharges of static electricity. Various committees of the American Medical Association have reported on precautions that are to be taken towards the prevention of such accidents. (Jour. A. M. A., February 14, 1931, p. 530).

Scarlet Fever Toxin.—The Dick scarlet fever toxin is regarded as a safe and efficient immunizing agent against scarlet fever. The main drawback to its use appears to be that several injections, generally not less than five, must be given before such a degree of immunity is established that the subject no longer gives a positive Dick test. (Jour. A. M. A., February 21, 1931, p. 633).

Limitations of Bacteriophage Therapy.—Recent investigations suggest that future therapy with bacteriophage preparations must be limited to certain definite anatomic types of infection. The deductions drawn are that no therapeutic effects whatever are predictable for bacteriophage except under conditions in which local extrabacterial bacteriophage concentration can be raised and maintained. From this it appears that bacteriophage therapy would be a predictable disappointment in erysipelas, furunculosis, pneumonia, pyelitis, cellulitis and bacteremia, and in cystitis except by concentrated irrigation. The use of this therapy would thus be limited to such closed organs as the intestine and to well encapsulated pus cavities. (Jour. A. M. A., February 28, 1931, p. 693).

Book Announcements

Crippled Children. Their Treatment and Orthopedic Nursing. By EARL D. McBRIDE, B. S., M. D., F. A. C. S., Instructor in Orthopedic Surgery, University of Oklahoma, School of Medicine; Attending Orthopedic Surgeon to St. Anthony Hospital; Chief of Staff to Reconstruction Hospital, Oklahoma City, Okla., etc. St. Louis. The C. V. Mosby Company. 1931. Octavo of 280 pages. One Hundred Fifty-nine Illustrations. Cloth. Price, $3.50.

Discovering Ourselves. A View of the Human Mind and How It Works. By EDWARD A. STRECKER, A. M., M. D., and KENNETH E. APPEL, Ph. D., M. D. New York. The Macmillan Company. 1931 Octavo of 306 pages. Cloth. Price, $3.00.

Concerning Earliest First Growth in the Human Ovum; Origin of First Blood Corpuscle and Plasm —First Blood Space and Vessel—The Three Blood Circulations—Blood Corpuscle Differentiation From First Multinucleoated Uncolored—Nucleus—Blood Corpuscle to the Final Non-Nucleated Red Blood Corpuscle of Maturity—The Erythrocyte—The Red Blood Plastid of Minot—Origin of Cancer. By FRANK A. STAHL, M. D., Rush, 1887. One Time. Volontar, Frauen Klinik, Munich; Demonstrator of Obstetrics. Rush Medical College, Chicago, Ill. Pamphlet of 157 pages. Illustrated.

Washington as a Religious Man. Washington, the Colonial and National Statesman. Washington and the Constitution. Washington as President. Edited by DR. ALBERT BUSHNELL HART, Authorized by the Congress of the United States. Published under the direction of George Washington Bicentennial Commission. Washington Bldg., Washington, D. C. Copies of these pamphlets will be furnished upon request.

Prenatal Care. Published by United States Department of Labor, Children's Bureau. Bureau Publication No. 4, Revised July, 1930. United States Government Printing Office. Washington. 1930. Pamphlet of 71 pages. Illustrated. For sale by the Superintendent of Documents, Washington, D. C. Price, 10 cents.

Virginia Medical Monthly

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Editorial

Surgery and Adhesive Pericarditis.

In this day and time when general business conditions are undergoing a tremendous depression there frequently appears, in the editorial columns of the big financial papers, an extensive expression of thought relating to Progressive Therapeutic measures in the handling of new problems prevailing in sick business.

In the lay papers the editorial columns are constantly filled with expressions of broad nature, decidedly ambiguous, speaking in high flung terms of Progressive Opinion in dealing with economic problems, and harping at length, especially by ill-advised politicians, on the necessity of adopting the policy of Progressive Doctrine.

In the editorials of prominent medical journals, we are constantly being reminded of the wisdom of Progressive Thought, and it would seem timely indeed that the policy of Progressive Thought and study be more forcibly directed to the problem of chronic adhesive pericarditis together with the possibility of relief that can often be given these conditions by properly directed surgical measures.

For generations, in the medical profession the problem of a badly decompensating heart has been considered hopeless, the cause being attributed to myocardial degeneration or valvular deficiencies. In the last twenty years, and especially the last seven years, there has been a preponderance of evidence brought forth by both the internist and the surgeon to prove that a large percentage of decompensating hearts is due to a restriction of the muscular action of the heart by fixation of an adherent pericardium to the chest wall or to a crippling constriction of the heart by an adherent and contracting pericardial sac incident to a chronic pericarditis

In Europe there have been approximately one hundred cases in which surgery has been directed to the relief of this condition with good results, of small or great degree, in about 40 per cent of the cases. In this country there have been reported thirty-four cases in the literature and there are several others, probably ten or a dozen, of which the writer has some direct knowledge in which the good results have approximated 50 per cent.

Three types of operative procedure have been advanced for relief of pericardial adhesions. First, the so-called Brauer operation in which part of the chest wall is removed and the adherent pericardium freed from its attachment to the chest wall. Secondly, the DeLorme operation in which the pericardium adherent to the heart proper and acting as constricting cast is freed and a goodly portion of it removed from the anterior surface of the heart. Thirdly, left phrenico-neurectomy as suggested by Trout, to set free the left diaphragm, for the heart is often anchored by a densely adherent pericardium to the diaphragm.

The proper execution of these surgical measures can be easily controlled through skilful technique but the selection of one or all of these

measures for application to the individual case must remain in doubt until experience in a larger series of cases has demonstrated their applicability to the problem in hand. The writer, for instance, has personal knowledge of one case of adherent pericarditis which has shown a remarkable and almost dramatic improvement in clinical symptoms from a left phrenico-neurectomy alone.

The diagnosis of adherent pericarditis is far from easy and the differentiation between intrinsic and extrinsic causes of cardiac decompensation often presents almost insurmountable difficulties. The application of surgical principles for cardiac decompensation is not yet ready for unquestioned support and clinicians who have these cases under their care are warranted in their doubtful acceptance until more clinical and surgical ground has been covered in the problem. We should bear in mind, however, that other hopelessly crippling conditions are relieved in a certain percentage of cases only by aid of surgery and thus approach the problem with a mind open to conviction.

Up to the great war, the mortality rate of chronic empyema was about 50 per cent. The mortality rate of intestinal obstruction after twenty-four hours' duration still remains about 50 per cent and the good results in the surgery of adhesive pericarditis up to the present time is about 40 per cent. Many other serious diseases present results, favorable or unfavorable, that would be fairly comparable to the surgery of the pericardium.

If we are true to our ideals of progressiveness, we should let our enthusiasm carry us more thoroughly and more studiously along the lines of Progressive Doctrine in cases of cardiac decompensation, bearing in mind the fact that where proper diagnosis can be made there is a good chance for skilfully directed surgical measures to afford much relief from the hopelessly crippling condition of adhesive pericarditis.

R. L. P.

Presidents' Message

The County Society as the Unit of Medical Organization.

The County Society is the basic unit of Medical organization. Membership in it, besides the obvious local professional and social advantages, gives each physician the privilege of becoming identified with the State and National Medical Associations, and thus assuming his obligations in the field of scientific organized Medicine.

The avowed purpose of the County Medical Society is, as has been well and tersely expressed: "to extend medical knowledge and advance medical science; to elevate the standard of medical education: to promote friendly intercourse among physicians; and to enlighten and direct public opinion in regard to the great problems of public health and hygiene, so that the profession shall become more useful to the public in the prevention and management of disease, and in prolonging and adding comfort to life."

At the meeting of the Medical Society of Virginia in Roanoke in 1909, a plan for the reorganization of our State Society along the lines proposed by the American Medical Association was presented, but opposed. Following that meeting, however, some local county societies were formed by proponents of this movement, there being but few in the State at that time.

Dr. Southgate Leigh, of Norfolk, in his presidential address at Lynchburg in 1913, strongly urged the reorganization plan for which he had been working during his year as president, by the formation of some county societies.

At that meeting, the Constitution and By-Laws of the Medical Society of Virginia were amended so as to make membership in the State Society dependent upon one's membership in a county organization chartered by the State Society, and a committee on Organization of County Societies was appointed. This was composed of Dr. Southgate Leigh, Chairman, and Drs. R. S. Griffith and T. V. Williamson.

The first report of this committee, presented at the 1914 meeting, showed a total of forty-seven (47) counties applying for charters. These included fifty-four (54) counties, and it was stated that twenty-three (23) others were lined up also to apply for charters.

At the 1930 meeting, our Executive Secretary reported only fifty-two (52) component

societies, but these represented eighty-eight (88) counties and the city of Alexandria.

This leaves twelve (12) Virginia counties not reported as organized, and several of the chartered societies are in various degrees of inactivity.

Ten (10) of the chartered societies are composed of more than one county, including from two (2) to nine (9) counties.

One of the inactive societies has reorganized since the first of this year, and, as evidence of much interest throughout the State, the Secretary has to date received answers from forty-two (42) of the fifty-two (52) secretaries to whom questionnaires were sent in February, and this is quite encouraging.

Nevertheless, we do not yet have a 100 per cent organization, for, as far as can be ascertained at present, twelve (12) counties have no record of ever having been chartered, and are as follows:

Amherst, Appomattox, Charles City, Craig, Culpeper, Fluvanna, Franklin, Goochland, Greene, Highland, Madison, and Stafford.

Several Amherst doctors are members of Lynchburg and Campbell County Society, and Roanoke Academy of Medicine has members from Craig and Franklin Counties, though they have not amended their charter, so far as known, to include these counties.

Stafford was supposed to be with the old Fredericksburg Association, but there is no record of it.

The above information is given with the hope of stimulating interest, and, possibly, suggestive and constructive criticism. It is mainly offered, however, to seek the assistance of physicians throughout the State in taking steps to organize any counties now without a County Medical Society.

It is well known that there are several most efficient Group societies with a membership representing physicians from two or more County organizations, and that there are six District Societies composed of more than two (2) counties which are component units of the State Society, and that there are, also, a number of recognized District Societies, which are not component parts of the State Society. All of these are doing most excellent work, but their activities do not cover the entire field of opportunity. All of these should be continued, and even enlarged, but every County in the State should have at least a skeletal organization, even though some physicians in these Counties may be members of some of the above groups, for, without this, some physicians in each County will be deprived of their privileges and professional opportunities.

It is most urgent that those physicians who know the value of proper medical organization, should interest themselves in aiding others who are not so fortunate. This will in no sense injure any existing medical organizations, but strengthen them, and give all physicians equal opportunities to forward scientific organized Medicine. It will also assist the officials of the Society in making practical the new plan of putting into effect the changes in Councilor Districts adopted at the meeting in Norfolk.

Consequently, the officials of the Society will be pleased to have any assistance, either as individuals, or as members of Society organizations, to aid in this necessary work.

J. Allison Hodges, M. D.,
President, Medical Society of Virginia.

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

Post-Graduate Medical Education in Town and County.

When one carefully studies the progress made in the field of medicine during the past century and compares this with the sum-total of medical knowledge prior to that time, one becomes astounded at the great lack of medical information on the part of the physicians of the past, and yet if we look about us today it is not hard to find physicians who have unqualified authority to practice medicine for the rest of their days and whose sum-total of medical knowledge is not far above that of some of the eminent physicians of many centuries ago. The human mind either progresses or retrogresses continuously and many

physicians, after obtaining a license to practice, devote their entire attention to making money either from their profession or in various business enterprises and thus rapidly retrogress in so far as their ability to practice the art of medicine is concerned, until after a while they are almost totally incompetent to care for the sick. Physicians of this type may be found in our largest cities as well as in certain rural districts. This is a sad fact and unquestionably an imposition on the public, and it is largely due to this incompetence on the part of some of our profession that we are hearing so much talk of State medicine. If this condition continues, the State will have to assume control, for surely there is nothing more vital to any nation than the health of its people.

During recent years the leaders of our profession have realized more and more the seriousness of this situation and have tried to combat the danger in many ways. One of the greatest efforts along this line in our state is the establishment of the Department of Clinical Education of the Medical Society of Virginia through the efforts of our eminent leader, Dr. J. Allison Hodges, but, sad to relate, those who most need help and who constitute the greatest source of danger to the public are usually the ones who rarely, if ever avail themselves of the opportunity of attending the excellent clinics in medicine which are now being brought to their very door and thus one of the most important problems that confronts the medical profession today is how to reach these individuals.

For the vast majority, all that is necessary is to "put over" a good program and there will be a good attendance, but probably the only way for us to bring out the fellow that refuses constantly to build himself in medicine is by the passage of a law somewhat similar to that which regulates the teachers in our state at the present day. That is to say, no longer to give a license to practice medicine for the remainder of the individual's life, but for a limited period, probably three years, at the expiration of which he shall either produce certificates showing that he has taken Post-Graduate work, or take another examination, or otherwise clearly demonstrate to the Board of Examiners that he is keeping up with the science of medicine.

As for the work of the Department of Clinical Education of the Medical Society of Virginia under the present existing laws, there are, to my mind, certain things essential for our success. As stated above, first among these is a good program and the best is none too good. There must be some one individual in each territory of the State who is willing to put his whole heart and soul into the work and see that each and every program presented is of such type as to make every one who attends feel that he has received a true inspiration and that he has added materially to his knowledge of medicine.

We should be careful to see that meetings are held in every county of our state, and I have found that we need two kinds of meetings; one the big, general type which will draw physicians for many miles around, or perhaps like the one held at the Central State Hospital in Petersburg recently, which drew physicians from all over the State; and then another type of meeting for the purpose of bringing into closer fellowship the individual physicians in each county. The programs at these latter meetings should be presented principally, if not entirely, by the physicians in the county in which the meeting is held, and I have noticed that a "Journal Hour" is often of great importance in such a meeting. There are many physicians who honestly have not the time nor the clinical material necessary to write good scientific papers and, naturally, no one likes to give anything but the highest type of presentation before his fellow-physicians, and, therefore, in these meetings it is frequently advisable to get a physician to make a scientific study of some outstanding recent contribution to medical literature and get on the floor and give a brief talk on the subject, consisting of a digest of the said article. This method is now successfully practiced in some of our largest clinics and many men will present a subject in this manner where only a few of his intimate associates are gathered, whereas he would be unwilling to make a presentation before a large medical meeting.

The councilor of each district in the State should keep an accurate roster of every physician in his territory and record the attendance of each physician at the various meetings in his district. In this way he can soon find out those who lack interest and by a few personal visits he may often interest those who could not otherwise be reached.

Care should be taken to see that no one group of physicians gets control of the meetings in a given district, but that the invitations to appear before these meetings are widely distributed.

Often a physician will complain that we are having too many medical meetings. My opinion is that this complaint is rarely, if ever, justifiable in the State of Virginia. Surely we should have at least one medical meeting each month in every councilor district and one every week would do us no harm. I am proud to say that in at least one city in our State there is a good medical program every week and so long as the effort is put forth to make the programs attractive and highly instructive, our meetings will be well attended.

In the fourth district we have succeeded in having most of our programs confined to one subject because we find that we can cover the subject better and really accomplish more with a good symposium than by a "spotted" program giving us a little knowledge about many things but not very much information about any one.

One of the most serious handicaps that presents itself today is that of financing meetings, but when we think of the fact that most good business men pay one dollar or approximately this each week for lunch with a civic organization, then surely we, as physicians, can pay one dollar for our plate each time we attend a medical meeting.

The Medical Society of Virginia has appropriated $500.00 to help in this work. Our president realizes this is entirely too small a sum and no doubt ways and means will be found by him to increase this amount, but until this is accomplished, there is no reason why we should have serious difficulty in financing our meetings through our various county and district societies.

Finally, there is one other problem that interests me in this connection and this is the post-graduate education of our colored physicians. In the Fourth District we have succeeded in having an invitation extended to them regularly. They sit in a body, take no part in the discussion and retire before the dinner is served. They attend regularly and are deeply appreciative of the opportunity. It would be well to have a few meetings in each district exclusively for colored physicians. Those who try to help them will find them most cooperative and appreciative.

WRIGHT CLARKSON.

A Word of Appreciation.

Looking back through the months since our annual meeting in Norfolk, the Chairman of this Department is much gratified with the hearty cooperation accorded him by the officers of the society, by the members of the advisory committee, the councils of the various districts, the secretary, Miss Edwards, and our executive secretary, Mr. G. W. Eutsler, who has been untiring in his efforts to advertise the clinical meetings held in various sections of the state and has been very active and helpful in securing teachers and clinicians to take part in the programs.

All meetings have been well attended, the programs have been well worked up and much interest manifested by those in attendance. Our president, Dr. Hodges, has been very helpful in assisting in working up the programs and while showing great zeal in performing the duties of the presidency has at all times kept close and sympathetic watch over the work of this Department.

Dr. Wright Clarkson, of Petersburg, councilor from the Fourth Distrct holds the record for the greatest number of clinical meetings held in one district; we are very fortunate in having in this Department an article growing out of his experience in these meetings. I take pleasure in endorsing Dr. Clarkson's views and feel sure his conclusions are well worth the serious consideration of all who are interested in the success of post-graduate education.

Information

All members of the Medical Society of Virginia are requested to write for any information desired on any subject relative to these Extension Courses in Graduate Medical Education, either to the Executive Secretary, Mr. George W. Eutsler, P. O. Box 707, University, Va., or to the Chairman of the Department of Clinical Education at Danville, Va.

I. C. HARRISON, M. D., *Chairman,*
President-Elect, Medical Society of Virginia.

Scheduled Meetings

Below is given program schedule for the NORFOLK COUNTY MEDICAL SOCIETY for May:

MONDAY, 11TH MAY—SECTION ON SURGERY.
Injuries to the Cervical Spine. Lt. Commr. H. E. Gardner, M. C.

Tumors of the Testicle. Lt. J. N. C. Gordon, M. C. Both of the U. S. Naval Hospital, Norfolk.

MONDAY, 18TH MAY—SECTION ON MEDICINE.

Microcytic Anemia. Dr. Douglas Vanderhoof, Richmond.

MONDAY, 25TH MAY—SECTION ON PEDIATRICS.

Acute Poliomyelitis with Special Reference to Serum Treatment. Dr. Claiborne Willcox.

As for past meetings, any member of the Medical Society of Virginia will be very welcome at any meeting of this Society.

The All-Day Clinic of the Norfolk County Medical Society, held on Wednesday, 15th April, was generally conceded to have furnished much valuable information to the profession. The program was of a practical nature, dealing with the every day problems met in ordinary practice, and the subjects were handled in a way to benefit the large number of physicians present. A specially appreciated feature was the mid-day luncheon so generously served by St. Vincent Hospital—only another evidence of the spirit of cooperation between the hospitals of the city and the medical practitioners.

These clinic days promise to be increasingly helpful phases of the professional life of the community and adjoining territory.

All other meetings scheduled for the past month, in cooperation with the Department of Clinical Education, have been held with most gratifying attendance.

The St. Philip Hospital Postgraduate Clinic for Negro physicians will be held June 15-27, under the auspices of the MEDICAL COLLEGE OF VIRGINIA and the Department of Clinical Education of the Medical Society of Virginia. The faculty will be composed of the regular staff of the Medical College of Virginia and two special lecturers who will come from Howard University, Washington, D. C.

Registration for this course will be limited and a fee of $10, payable in advance, will be charged. Registration for this course will close June 1.

For further details, write Dr. W. T. Sanger, President, Medical College of Virginia, Richmond.

A clinical meeting will be held in Martinsville, Va., in May, under the auspices of the PATRICK-HENRY MEDICAL SOCIETY and the Department of Clinical Education of the State Society. Dr. J. M. Shackelford, Martinsville, councilor of the Fifth Congressional District, will be glad to give further information about this meeting. All members of the State Society are invited.

Dr. Joseph Colt Bloodgood, of Baltimore, will be the principal speaker at the meeting of the POST-GRADUATE MEDICAL SOCIETY OF SOUTHERN VIRGINIA, to be held in cooperation with the Department of Clinical Education of the State Society in Petersburg, Va., May 19th. This meeting will be held in the Medical Arts Building, beginning at 2 P. M. Other speakers will be Dr. J. Shelton Horsley, Richmond; Dr. Herbert C. Jones, Petersburg, and the professors of surgery at the State's two medical colleges. Supper will be served at 7 P. M

Proceedings of Societies

The James City—New Kent County Medical Society

Met at the hotel at Providence Forge, Va., on April 2nd, at which time supper was served by those in charge of the meeting. Dr. A. M. Sneed, Toano, presided. The secretary, Dr. J. R. Tucker, of Williamsburg, gave quite an interesting report of a boy fourteen years of age who apparently had a phthalein poisoning, having taken six phenolax wafers on the day before he entered the hospital.

After some discussion, a committee was appointed to try to get the insurance companies to adopt some standard form for all colored insurance, the request to have them filled out frequently being quite a bother to the physician.

Dr. J. M. Henderson offered his cottage on the York River as the place of the next meeting which is to be held July 2, 1931, and his offer was accepted.

The Post-Graduate Medical Society of Southern Virginia

Held its regular meeting at Waverly, Va., on April the 14th, under the presidency of Dr. Frank N. Mallory, of Lawrenceville. There was an attendance of over seventy doctors and the papers in the form of a symposium on Obstetrics, were interesting and instructive and provoked much discussion. Following the scientific meeting, the members enjoyed a dinner at the Hotel Waverly.

At this meeting a resolution was presented from the Lunenburg County Medical Society, requesting that this county organization be included in the Post-Graduate Medical Society. The resolution was unanimously approved.

The Public Relations Committee Active.

Dr. G. F. Simpson, Purcellville, Va., chairman of the Public Relations Committee of the State Society, has accepted invitations to appear before several of the local societies of the State, for the purpose of presenting the work of his committee.

News Notes

Preparations Under Way for our Roanoke Meeting.

We have been advised that Roanoke doctors have definitely selected the Patrick Henry Hotel as hotel headquarters for our sixty-second annual meeting to be held in that city, October 6th, 7th, and 8th.

Roanoke expects to initiate as one of the features of the State Society meeting a handicap trap shoot which will be held at the Roanoke Gun Club. The Club is beautifully located for the purpose and has the largest membership of any gun club in Virginia. Dr. L. G. Richards, Roanoke, is chairman of the committee in charge of this feature, and any information desired about the trap shoot can be obtained from him.

Dr. W. L. Powell, Medical Arts Building, Roanoke, is general chairman of committee of arrangements.

The American College of Physicians

Held its annual convocation in Baltimore, the latter part of March, under the presidency of Dr. Sydney R. Miller, of Baltimore. Dr. S. Marx White, Minneapolis, succeeded to the presidency, and Dr. Francis M. Pottenger, Monrovia, Calif., was chosen president-elect. Dr. George Morris Piersol, Philadelphia, continues as secretary-general, and Mr. E. R. Loveland, also of Philadelphia, as executive secretary. The sixteenth annual clinical sessions will be held at San Francisco, Calif., in 1932.

The following is a list of physicians residing in Virginia who were elected to Fellowship and inducted into the College at the Baltimore meeting:

Dr. Ernest William Brown, Quant'co.
Dr. Charles Martin Caravati, Richmond.
Dr. Robert Finley Gayle, Jr., Richmond.
Dr. Henry Bearden Mulholland, University.
Rr. Alexander F. Robertson, Jr., Staunton.
Dr. Mason Romaine, Petersburg.
Dr. James Hunt Royster, Richmond.
Dr. Blanton Page Seward, Roanoke.
Dr. Franklin Davis Wilson, Norfolk.
Dr. James Edwin Wood, Jr., University.

Married.

Dr. James M. Northington, Charlotte, N. C., and Miss Mary Elizabeth Clark, La Grange, Ga., April 11th. Dr. Northington is well known to our readers as secretary-treasurer of the Tri-State Medical Association of the Carolinas and Virginia and also as owner and editor of *Southern Medicine and Surgery* of Charlotte.

Dr. Charles B. Martin and Miss Ruth Davis, both of Danville, Va., April 4th. Dr. Martin is a graduate of the Medical College of Virginia in the class of 1927.

Dr. Donald Snead Daniel, of Johnston Willis Hospital, Richmond, and Miss Josephine Townsend Moore, also of Richmond, April 18th.

Dr. John Roland Ellison and Miss Julianne Butler, both of Suffolk, Va., April 18th. Dr. Ellison is a member of the class of '27, Medical College of Virginia, and is now connected with the staff of Lakeview Hospital, Suffolk.

Dr. Charles Linwood Savage, Sanatorium, Va., and Miss Selma Repass, Bluefield, W. Va., early in April. Dr. Savage is an alumnus of the University of Virginia, Department of Medicine, class of '29.

Dr. Benjamin Franklin Phillips, class of '28, Medical College of Virginia, and Miss Julia Watson Sinclair, of Marion, N. C., March 16th. They are making their home at Quantico, Va.

Philadelphia Meeting of the A. M. A.

Seldom do Virginia doctors have such an opportunity to attend the meeting of the American Medical Association as this year. The place is Philadelphia and the dates June 9th-12th, though the House of Delegates convenes on the 8th. We hope for a large representation from this State.

Dr. William Gerry Morgan, Washington, D. C., for a number of years a member of our own State Society, is president. Virginia's delegates are Drs. Southgate Leigh and E. C. S. Taliaferro, Norfolk, and Dr. J. W. Preston, Roanoke. Our alternates are Drs. J. E. Marable, Newport News, E. G. Williams, Richmond, and Charles R. Grandy, Norfolk.

Arrangements have been made for a splendid meeting and lovely entertainment is in store for the ladies. Fellows should make this meeting the occasion for a vacation for themselves and their wives.

Information Requested.

One of our readers is anxious to secure a copy of the MONTHLY or SEMI-MONTHLY which contained an article that pictured doctors thirty years in the future. He says that it was a kind of Rip Van Winkle story, picturing a doctor who returned and found conditions so changed that it was ideal to live and practice medicine in the age in which he awoke.

The MONTHLY will greatly appreciate information which will help us trace the article for our reader.

Medical College of Virginia News.

A letter written in 1879 by the late Dr. Charles Edward Brown-Sequard, a member of the faculty of the Medical College of Virginia in the fifties and one of the outstanding physicians and teachers of his generation, has been presented to the Medical College of Virginia by Dr. Joseph L. Miller, of Thomas, W. Va., an alumnus of the institution. This letter is framed with an autographed engraving of Dr. Brown-Sequard and will be given a place of honor among the historic mementoes of the past of the college.

Through the courtesy of Dr. J. Shelton Horsley the Canti cancer film, furnished by the American Society for the Control of Cancer, was shown at the Medical College of Virginia on Wednesday, April 15, to a large group of interested physicians and laymen.

Dr. Fred C. Zapffe, representative of the Association of American Medical Colleges, visited the college several days this month. He gave many helpful suggestions on the various aspects of medical education.

News From University of Virginia.

Dr. Lawrence T. Royster spoke before the Norfolk County Medical Society on March 30th. He discussed the subject of Diarrhoea and Anhydremia.

Dr. Henry B. Mulholland and Dr. J. Edwin Wood were elected Fellows of the American College of Physicians during the recent meetings in Baltimore.

Dr. H. E. Jordan and Dr. C. C. Speidel attended the meetings of the American Association of Anatomists in Chicago from April 2nd to 4th.

Dean J. C. Flippin addressed the Warwick County Medical Society on April 7th, in Newport News, on the subject of Treatment of Heart Disease.

Dr. Alfred Chanutin and Dr. Sydney W. Britton attended the meetings of the Federation of American Societies for Experimental Biology in Montreal on April 9th to 11th.

Dr. William H. Park, Director of the Public Health Laboratories of New York City and Professor of Bacteriology and Hygiene at New York University, visited the Medical School on April 8th. In the morning he lectured to the fourth year class on Public Health and Hygiene, and in the afternoon he addressed the faculty and students on the subject of Bacteriology and Serum Therapy of Pneumonia.

News From Duke University.

Leave of absence of one month has been granted Dr. Julian M. Ruffin, in order that he may study the organization of outpatient departments in other hospitals.

Members of the faculty were delighted to receive a visit from Dr. Lewellys F. Barker on March 21st.

The American College of Physicians recently elected Dr. Harold L. Amoss to Fellowship. Dr. Amoss attended the meeting in Baltimore, where he presented a paper entitled "Recurrent Erysipelas."

The Dedication Exercises of the Duke University School of Medicine and the Duke Hospital were held on April 20th. At the morning session, the buildings were presented by Mr. George Garland Allen and accepted by Col. John F. Bruton. Dr. Thurman D. Kitchin, President of the Wake Forest College, presented greetings from the medical profession of North Carolina. Dr. David Linn Edsall, Dean of the Harvard Medical School, also spoke at this session. A luncheon was given in honor of the delegates and invited guests, and several speakers were on the program. The buildings were open for inspection in the afternoon. Following this, a reception was given by the President and Mrs. William Preston Few in honor of the delegates, invited guests, and members of their families in attendance. A dinner was then given for the

delegates and invited guests. An evening session closed the meeting.

Beware of This Patient.

Dr. Wright Clarkson writes us that a woman has been visiting the offices of various physicians in Petersburg, during the last six weeks, pretending to be sick, getting a prescription, and then presenting a ten dollar check and asking for change, with the result that the check fails to be good. It is said that the same thing has happened recently in Richmond.

While Dr. Clarkson was not one of the victims of this woman, he suggested that we might wish to use the notice in the MONTHLY, that our readers may be on guard against this strange patient.

Graduate Courses for Rural Physicians.

Instruction in pediatrics and obstetrics occupies two months of the four-month course given by the Harvard University Medical School for physicians practicing medicine in country districts. The study of general medicine occupies the other two months. A grant of the Commonwealth Fund has made this course possible and is sufficient to cover the expenses for tuition and travel and a monthly stipend of $250 for five physicians from each of the two units of the fund's new Massachusetts health demonstration and for five physicians from the State at large.

The Virginia Section of American Society of Bacteriologists

Held its annual meeting in Richmond, April 7, 1931. Dr. William H. Park, of the New York City Health Department, was guest speaker of both afternoon and evening meetings.

At the afternoon session the following papers were presented:

The Agglutination of a Polyvalent Alcaligenes Abortus (Bang) Antigen under Varying Conditions, by Dr. L. E. Starr, professor in the Department of Zoology and Pathology at the Virginia Polytechnic Institute;

Problems in the Relationship of Streptococci and Diphtheroid Bacilli to Chronic Infectious Arthritis by Aubrey H. Straus, who has been conducting a private Bacteriological Laboratory in Richmond for the past two years. His paper was a result of the bacteriological findings in several hundred arthritic blood cultures examined during that period. Drs. O. O. Ashworth and W. H. Higgins discussed this paper with especial emphasis on the correlation of the bacteriological findings with clinical diagnosis in chronic infectious arthritis;

The Typing of Pneumococci and Practical Therapeutic Value of the Anti-Pneumococcus Serum, by Dr. Wm. Park. The lecture was illustrated with lantern slides, and especial attention was given to the slide method of more rapid pneumococcic typing;

Fungus Infections of the Skin, by Dr. Frederick Shaw, professor of Bacteriology at the Medical College of Virginia. He has made various studies of pathogenic fungi, and lantern slides of his more interesting cases were shown. Dr. Philip Jones discussed Dr. Shaw's paper, with especial reference to peculiarities in morphology of some of the fungi with which he had worked.

The evening session was held at the Commonwealth Club. Dr. E. C. Levy, for many years City Health Officer of Richmond, was toastmaster at the dinner.

Dr. Wm. Park discussed the Toxoid, with and without alum, as compared with Toxin-antitoxin as an immunizing agent against diphtheria. Lantern slides illustrated the remarkable decrease in diphtheria in New York City as a result of immunization with toxin-antitoxin.

The Annual Report of St. Elizabeth's Hospital,

Richmond, Va., for 1930 has just appeared. It shows 1,302 patients during the year 1930, in comparison with 1,364 patients in 1929. There were thirty deaths among the operative cases, one among the surgical non-operative cases, three among the urological cases, and eleven among the medical cases, making the total number of deaths forty-five, and the mortality rate 3.46 per cent. This compares well with the total deaths of sixty-seven, or a mortality rate of 4.91 per cent, in 1929.

Appended to the report and constituting an interesting feature of it is a synopsis of all deaths, including remarks upon the cases and a brief report of the necropsies. Twenty-four necropsies were done (53.6 per cent), and of this number 66.6 per cent were upon surgical and urological patients.

The anesthesia record shows a marked decrease in the use of ether, and 131 operations in which avertin was used.

Dr. Charles W. Putney,

Staunton, Va., will sail from New York,

May 30th, on the S. S. *Bremen*, to spend several months in post-graduate study in Vienna. While away, he also expects to visit some of the other surgical clinics in Europe.

Average Age of Medical Students.

Skull and Bones, official publication of the students of the Medical College of Virginia, Richmond, in its April 16th issue, published an interesting article on the average age of the senior medical students at that institution. The statistician found that the ages of this year's senior medical class, if added together, is exactly 2,570 years, or an average age per student of 26 years and 6 months. The youngest member of the class, at the time of graduation, will be 22 years and 2 months. At a recent class meeting, is was unanimously agreed to present him with a parting gift of one case of Mead's Dextri-Maltose and one dozen triangular B. V. D.'s.

Dr. R. L. Mason,

Roanoke, Va., recently went before the Florida Board of Medical Examiners, at their meeting in Jacksonville, and came through successfully. However, we understand that Dr. Mason will continue his practice in Roanoke.

Do You Plan to go to Europe This Summer?

If so, it should be worth your while to inquire about the tour sponsored by the VIRGINIA MEDICAL MONTHLY and a number of the other State journals. This will combine clinics, sightseeing and pleasant companions, for the invitation to join this party is extended only to members of the various State societies.

Dr. Newell C. Gilbert, Professor of Medicine in Northwestern University Medical School, has accepted the leadership of the party. He has a delightful personality and knows the European clinics intimately.

In their booklet on the tour, the Travel Guild has printed a list of eminent clinicians in each city who have consented to make the specialized clinic assignments.

Write the MONTHLY for information with regard to this tour, before making final arrangements to join any other party. One eminent physician says he has "never seen a better planned tour."

New Drug Store at Alberta.

Dr. L. A. Law announces that he has built a new brick drug store in Alberta, Va., which he is operating with J. A. Trent, of Danville, Va., a registered druggist, in charge.

The American Proctologic Society

Is to hold its annual meeting in Philadelphia, June 7th, 8th, and 9th, just prior to that of the A. M. A., under the presidency of Dr. Dudley Smith, of San Francisco. The Bellevue-Stratford will be hotel headquarters. The scientific program promises to be very interesting and there will be the annual dinner for members on the last evening.

Regular practitioners, members of the American Medical Association, and not affiliated with medical groups admitting those not members of the A. M. A., are invited to attend the scientific sessions. For additional information, address the secretary, Dr. Curtice Rosser, 710 Medical Arts Building, Dallas, Texas.

Dr. L. M. Abbott,

Recently of Parrott, Va., announces his removal to New Castle, Va.

The Pan-American Medical Congress

Will be held in the City of Mexico, from the 26th to 31st of July, 1931, under the auspices of the Department of Public Health of the Government of the United States of Mexico. Applications for membership in the Congress should be sent to Dr. Francisco de P. Miranda, Secretary of the Committee of the Third Pan-American Medical Congress, Departamento de Salubridad, Mexico, D. F.

Important Notice.

The Post-Graduate Course of Ear, Nose and Throat Surgery at the University of Bordeaux, France, will commence July 27, 1931.

The course is given in the English language. The class is limited to twelve physicians and is offered by Prof. George Portmann.

For information apply to Dr. Leon Felderman, 413 Mitten Building. Philadelphia, Pa.

Dr. Southgate Leigh,

Norfolk, Va., has been appointed chairman of the Public Health Committee of the Virginia State Chamber of Commerce, for the ensuing year.

The West Virginia State Medical Association

Will hold its annual meeting at Clarksburg, May 19th-21st, under the presidency of Dr. C. H. Maxwell, of Morgantown. Headquarters will be at the Stonewall Jackson Hotel. Dr. Hugh Cabot, Rochester, Minn., will be the speaker at the annual banquet which will be followed by a dance at the hotel. A number of invited guests will present papers at the various sessions.

Dr. C. R. Hoskins, Jr.,

Of the class of '27, Medical College of Virginia, who has been practicing for several years at Brewton, Ala., is now serving an internship at the Manhattan Eye, Ear and Throat Hospital, New York City.

Service to Our Readers.

The MONTHLY and the Cooperative Medical Advertising Bureau of Chicago will be glad to help you secure information about pharmaceuticals, surgical instruments or other manufactured products, whether or not advertised in this journal. Write us, if we can serve you at any time, or send your inquiry direct to the Cooperative Medical Advertising Bureau, 535 North Dearborn Street, Chichago.

P. A. Surgeon R. A. Vonderlehr,

Of the U. S. Public Health Service, was relieved from duty at the National Institute of Health, Washington, D. C., about the middle of April, and assigned to duty in the Division of Venereal Diseases, Washington, D. C.

The Virginia State Dental Association

Will hold its sixty-second annual meeting at Old Point Comfort, Va., May 11th, 12th, and 13th, under the presidency of Dr. R. F. Simmons, of Norfolk. Members of the Medical Society of Virginia will be welcome at any of the scientific sessions. A number of interesting clinics are being planned and, of course, there will be the usual golf and other diversions.

Many Attend Pre-School Examinations.

A total of 664 childern responded to the request of the medical department of the Richmond public schools for pre-school registration prior to the opening of the spring term, according to report by Dr. N. Thomas Ennett, medical director of the City school system. Of the number, all of whom were given blanks to be filled out by their family physicians after thorough physical examinations, 307 took the examinations and returned the blanks. Of the 664 children listed in the pre-school registration this year, 158 had already been vaccinated against smallpox and 239 were vaccinated before entering school. Two hundred and eight of the children had already had toxin-antitoxin and thirty-nine additional were given the treatment prior to the opening of the school term. Many other defects were found by the family doctors and corrected prior to school entrance.

This pre-school registration work has been carried on in the schools for the past four years and the records show that the parents are coming to realize more and more that a child's progress in school is dependent upon his health and they are doing everything possible to send their children to school physically fit. Reports also show that the work is more widely distributed among the members of the medical profession than would have been expected.

Dr. W. Preston Burton,

After practicing at Boissevain, Va., for the past seven years, has just located in Covington, Va., where he expects to operate a small hospital which will be opened early in the month.

Dr. William M. Dick,

Recently of Newport News, Va., has been appointed assistant visiting surgeon in the Ear, Nose and Throat Service at Bellevue Hospital, the appointment having become effective March 1, 1931.

Maryland Restricts Sale of Methanol Wood Alcohol.

The sale and distribution of methanol wood alcohol will be stringently regulated in Maryland according to the provisions of the Edmunds Bill which was adopted by the Maryland Legislature and signed by Governor Albert C. Ritchie, April 7.

The bill prohibits the sale of methanol wood alcohol, whether sold for anti-freeze or other commercial purposes, unless sold in containers bearing a warning label stating that it is a violent poison and cannot be made non-poisonous and will cause blindness or death if taken internally. Methanol must also be colored to prevent it from being confused with potable alcohol and must contain a substance which will cause vomiting if it is imbibed.

A record must be kept of all individual sales in containers of less than fifty gallon drums, whether to be used as an automobile anti-freeze, paint or other commercial solvent, and the record must state the date, name and address of the purchaser and intended use. The penalty for violation of the law includes a fine of not more than five hundred dollars or imprisonment for not less than three months nor more than one year, or both.

The bill was endorsed by the Maryland Automobile Club and labor and public health organizations.

Dr. Morris Fishbein,

Editor of the *Journal of the American Medical Association*, addressed the Norfolk County Medical Society on "State Medicine" at its meeting on the evening of April 27th.

Dr. J. S. Horsley, Jr.,

Has returned to his home in Richmond, Va., after several weeks in Cuba and Southern Florida, where he went to convalesce after a recent operation.

Civil Service Positions for General Medicine and Surgery.

The U. S. Civil Service Commission, Washington, D. C., announces open competitive examinations for Medical Officer, Associate Medical Officer, and Assistant Medical Officer in General Medicine and Surgery, for filling vacancies throughout the United States. Applications will be rated as received by the Commission, until June 30, 1931.

Dr. J. Allison Hodges,

President of the Medical Society of Virginia, was a guest of the Virginia Chapter of the American Bacteriological Society in Richmond and extended greetings from the State Society.

At the meeting of the Mid-Tidewater Medical Society in Saluda, April 28th, Dr. Hodges, by invitation, presented a sketch of the work of the State Society.

Dr. James H. Culpepper,

Norfolk, Va., recently accepted the position as Medical Director of the Norfolk Protestant Hospital.

Dr. R. L. Hudnall,

Beverlyville, Va., was elected service officer of the recently organized Northumberland Post of the American Legion.

Chicago Clinics.

The annual post-graduate summer clinics conducted by Cook County Hospital, Chicago, under the auspices of the Chicago Medical Society, will be held June 22nd to July 3rd. Dr. N. S. Davis, III, Secretary of the Society, reports that the clinics will be organized to give the practicing physicians in attendance practical instruction in the line of medicine and surgery. In fact, the two weeks will cover an intensive post-graduate study of the latest modern medical developments. Cook County Hospital offers an excellent opportunity for such study.

Medical men from all sections of the United States and Canada are expected to attend these clinics which will be held from 8 A. M. to 5 P. M. each day and the lectures that will be given three nights each week at 8 o'clock. Physicians desiring further information about this post-graduate course should write the Secretary of the Chicago Medical Society, 185 North Wabash Avenue, Chicago.

Milk-Borne Epidemics.

In 1929, 44 milk-borne epidemics were reported in the United States, says the September *Child Health Bulletin*. These involved nearly 2,000 cases of disease and resulted in 48 deaths. All but one of the epidemics were caused by raw milk.

The American Association for Cancer Research,

At its meeting held in Cleveland, Ohio, April 1st, elected Dr. Francis Carter Wood, of New York, as president, and re-elected Dr. William H. Woglom, also of New York, as secretary and treasurer.

Survey Shows Many General Hospitals Providing Care for Mental Patients.

The movement for the care and treatment of mental patients in general hospitals in the United States has made marked progress during the past decade, according to a survey by The National Committee for Mental Hygiene which is to be published shortly.

Questionnaires were sent to some 600 hospitals registered as approved for interne training by the Council on Medical Education and Hospitals of the American Medical Association, and each of these hospitals was requested to furnish information as to the existence of clinics and psychopathic wards or departments where examination or treatment might be given to mental patients.

Of the 421 hospitals that replied, 122 reported special facilities; seventeen reported incidental services; and a total of 3,298 beds for mental patients was reported by fifty-three of the fifty-six hospitals that have special wards.

Of the 122 hospitals reporting special facilities for mental patients fifty-six have special mental wards; ninety-seven reported clinics; thirty-one reported both wards and clinics; twenty-five reported wards only; and sixty-six reported clinics only.

The survey was made in response to a need indicated by numerous requests from physicians, social workers and others for more ex-

tensive information than has been available up to this time.

Dr. D. Hunter Marrow

Has returned to his home at Boydton, Va., after spending the winter months at Daytona Beach, Fla.

Dr. and Mrs. Alexander G. Brown

Are returning to their home in Richmond, the first week in May, after a visit abroad for several weeks. They landed at Gibraltar, motored through Spain, and visited a number of places of interest on the Mediterranean.

Dr. Victor K. Young,

Of the class of '27, Medical College of Virginia, who has recently been physician to the Hotel Pennsylvania, New York City, has established himself in offices at 506 East Main Street, Riverhead, Long Island, N. Y., where he will be engaged in private practice.

The Virginia State Board of Medical Examiners Changes Date of Meeting.

On account of a conflict of the date of the graduating exercises at the University of Virginia and the dates previously set for the Board meeting, the Executive Committee of the Board has found it necessary to change the date of its June meeting from June 16-19 to June 23-26, 1931.

Obituary Record

Dr. Andrew Fullen Horne

Died at his home in Glade Spring, Va., March 3rd, of cerebral hemorrhage. He was seventy-four years of age. Dr. Horne studied medicine for a while at the University of Virginia but received his degree from the College of Physicians and Surgeons, Baltimore, in 1884. He had been a member of the Medical Society of Virginia for forty-six years.

Dr. Robert Alston Martin,

For thirty-two years city health officer of Petersburg, died suddenly from a heart attack, April the 1st, though his health had not been good for some months. Dr. Martin was a native of Petersburg and sixty-eight years of age. He graduated in medicine from Bellevue Hospital Medical College, New York, in 1885. After several years he returned to Petersburg and was for sometime one of the city doctors before being made head of its health department. He had also been for some years on the local board of U. S. Pension Examiners, and was a member of the Medical Society of Virginia. His wife died about ten years ago, but he is survived by a sister and several nieces and nephews.

Dr. Richard P. Thornton,

Of Republican Grove, Va., died March 26th, after an illness extending over several years. He was a native of Halifax County, Va., and had practiced in that section ever since his graduation from the Medical College of Virginia in 1884. He was a member of the Medical Society of Virginia and a Mason, his burial having been conducted with Masonic honors. His wife and seven children survive him.

Dr. Peter B. Elliott,

Blacksburg, Va., died at his home in that place on February 15th. He was sixty-two years of age and a graduate of the College of Physicians and Surgeons, Baltimore, in 1895. Dr. Elliott was at one time a member of the Medical Society of Virginia.

Dr. Ernest Ellwood Anderson,

Crewe, Va., died April 21st, of pneumonia. He was thirty-eight years of age and graduated from the North Carolina Medical College in 1917. Dr. Anderson is survived by his wife and two children.

Resolutions on Death of Dr. Irby.

WHEREAS, God in His wisdom, on March 16, 1931, saw fit to remove from our midst our friend and coworker, Doctor Moreland R. Irby, and

WHEREAS, He has been a loyal and faithful member of the Richmond Academy of Medicine for many years, during which time he enjoyed the confidence and esteem of the entire profession, and

WHEREAS, His Christian character and beneficent influence endeared him to a large clientele; be it

RESOLVED, That the Richmond Amademy of Medicine keenly feels the loss of one of its most valuable members; and that we extend to the bereaved family our deepest sympathy in their sorrow; and, be it further

RESOLVED, That these preambles and resolutions be spread upon the minutes of the Academy; that a copy be sent to the family; and that they be published in the VIRGINIA MEDICAL MONTHLY.

Signed:

W. S. HODNETT,
A. E. TURMAN,
W. T. OPPENHIMER,
Committee.

Dr. Miles B. Jones,

Well known Negro physician of Richmond, Va., died April 9th. He had practiced his profession here for some thirty years and was widely known among the people of his race. He was connected with the Sarah G. Jones Memorial Hospital, which was established as a memorial to his first wife. He was graduated from Howard University in Washington, D. C.

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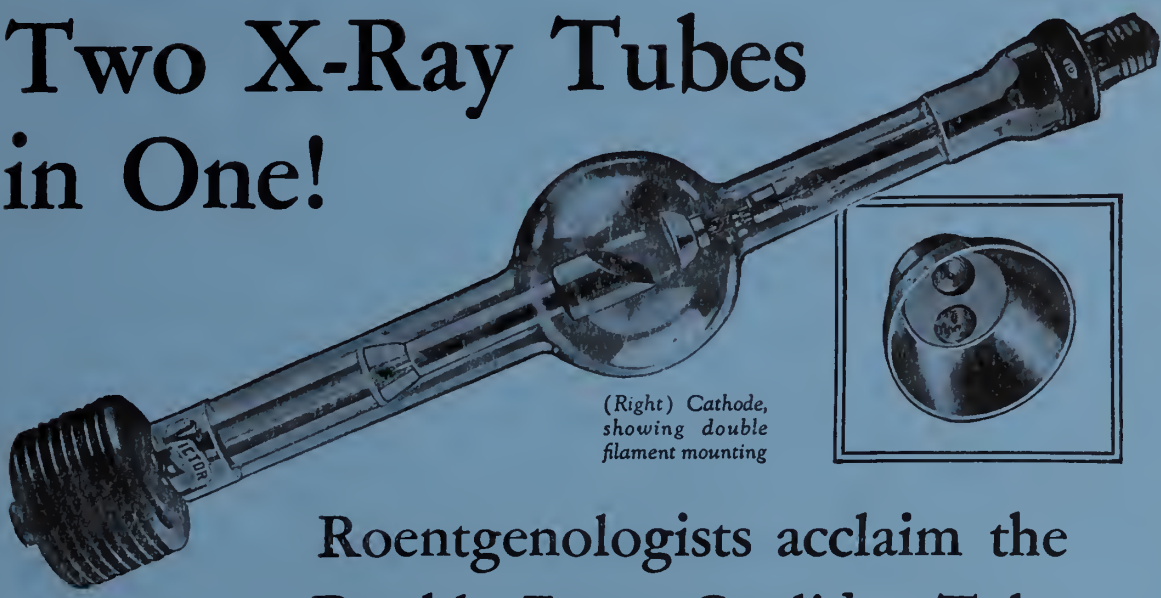

(Right) Cathode, showing double filament mounting

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	100	10	45
	100	20	2½
Large Focal Spot	100	50	9½
	85	50	12½
	100	75	3
	100	100	½
	75	100	3

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THE SIGNIFICANCE OF BLOOD PRESSURE CHANGES IN HYPERTENSION*†

By J. EDWIN WOOD, Jr., M. D., University, Va.

Blood pressure varies in the normal and in the hypertensive individual. The many factors influencing the height of blood pressure under physiological circumstances have been fully discussed.[1] The tendency to spontaneous changes of blood pressure in essential vascular hypertension has been studied[2-3-4] and noted as an early and almost characteristic feature of that affection.[5]

It is the purpose of this paper to record the blood pressure fluctuations taking place in a group of hypertensive patients with and without renal impairment and to discuss briefly the factors apparently governing the changes. No attempt has been made to select cases other than to obtain twenty-five examples with and twenty-five without kidney damage. Accordingly, a somewhat miscellaneous group has been recruited from the ward and out-patient service of the University of Virginia Hospital. The majority of these patients are still under observation, and return at varied intervals for manometer readings From the tables it is at once evident that the changes in blood pressure are not altogether idiopathic, and emphasis is laid upon the fact that known and apparently causal factors not infrequently accompany the variations in blood pressure.

The tabulation of the highest and the lowest of the several blood pressures recorded on each patient's hospital and out-patient record does not represent a carefully controlled or scientific method of study. It does, however, show the desirability of a critical attitude and the necessity for interpretations of blood pressure variations in terms of pathological physiology. As in our own experience, many physicians consciously fail to appreciate the wide fluctuations of arterial pressure during the course of a day. Mueller[6] has already noted the hourly and diurnal variations in blood pressure both in the hypertensive and normal individual. Weekly and seasonal changes have also been recorded at the Mayo Clinic. So, as Alvarez aptly states, before finally concluding upon the true height of a given patient's blood pressure, one must know the time of day, the day of the week, and the season of the year. The latest temperature recorded on the patient's sick child and the condition of the stock market might well be added in some instances. No attempt is made in the subsequent discussion of these fifty patients to account for all of the factors governing the variations in arterial pressure, but rather to picture roughly some of the main events which contribute to a falling blood pressure in hypertensive cases and to further emphasize the futility of a single observation.

Initially it was suspected that a more constant high pressure would be encountered in hypertensive patients showing renal damage, and for this reason the study was grouped as in Tables I and II. This preliminary hazard proved to be incorrect, as shown below.

In the fifty patients observed, the initial systolic pressure varied from 179 mm. Hg. to 280 mm. Hg., and only four had an initial pressure of less than 200 mm. Hg. An initial diastolic pressure of less than 110 mm. Hg. was recorded in but two instances. The writer is well aware of the errors often encountered relative to the method used for estimating diastolic pressure. However, it is known that the discrepancy in diastolic readings seldom exceeds an average of six mm. Hg.,[1] regardless of whether the reading be taken at the end of the third sound phase or the fourth sound phase heard below the blood pressure cuff. Tables I and II, in addition to other details, record the highest and lowest systolic and diastolic pressures for each patient during the period of observation.

Each of the twenty-five patients from the group with impaired renal function evidenced from 39 to 115 mm. Hg. fall in pressure at

*Read before the sixty-first annual meeting of the Medical Society of Virginia, at Norfolk, October 21-23, 1930.

†From the Department of Internal Medicine and the Cardiac Clinic of the University of Virginia Medical School, University, Va.

TABLE I
CASES WITH HYPERTENSION AND IMPAIRED RENAL FUNCTION

No.	Case	Age	R	S	High Syst.*	Low Syst.	High Diast.	Low Diast.	Syst. Var.	Diast. Var.	Observations	Apparent Explanation of Fall in Blood Pressure
1	AT	57	W	F	250	170	176	90	80	46	9 in 3 yrs.	Rest
2	JS	50	W	F	235	165	135	92	70	43	17 in 3 yrs.	Rest
3	LM	57	W	M	215	160	140	74	55	66	9 in 10 yrs.	Congestive Heart Failure
4	HF	27	W	M	212	140	140	80	72	60	14 in 2 yrs.	Unexplained. C. N. S. Lues
5	WM	70	W	M	186	114	150	70	72	80	12 in 2 yrs.	Cong. Fail.—Cor. Thromb's
6	BH	45	W	M	224	185	130	100	39	30	9 in 2½ yrs.	Congestive Heart Failure
7	FS	40	W	F	250	148	140	80	106	60	45 in 1 yr.	Uremia
8	TK	67	C	M	250	148	152	104	102	48	15 in 4 yrs.	Congestive Heart Failure
9	BC	52	W	M	200	133	140	88	67	52	34 in 4 yrs.	Congestive Heart Failure
10	HM	59	W	F	224	130	124	75	94	49	20 in 10 yrs.	Unexplained
11	AG	28	C	F	230	140	170	92	90	78	50 in 8 yrs.	Congestive Heart Failure
12	JP	53	C	F	240	165	160	75	75	85	25 in 3 yrs.	Unexplained
13	VH	60	C	F	260	160	140	112	100	28	9 in 3 yrs.	Unexplained
14	AF	52	W	M	240	125	140	80	115	60	8 in 3 yrs.	Severe Cerebral Arterioscler
15	GW	49	W	F	260	170	140	112	90	28	7 in 5 mos.	Uremia
16	WC	18	C	M	220	110	120	40	110	80	20 in 3 wks.	Uremia
17	CH	57	C	F	245	194	154	116	51	38	30 in 1½ yrs.	Rest—Uremia—Cong. Fail.
18	LB	41	W	F	280	200	185	135	80	50	13 in 4 mos.	Rest
19	GP	46	W	M	250	185	140	110	65	30	14 in 4 yrs.	Uremia—Congestive Failure
20	MP	56	C	M	210	120	130	70	90	60	21 in 6 yrs.	Unexplained—C. N. S. Lues
21	CT	42	W	M	202	160	140	104	42	36	10 in 2 mos.	Severe Nasal Hemorrhage
22	AJ	35	C	F	260	194	155	110	66	45	16 in 3 yrs.	Uremia—Congestive Failure
23	MC	62	C	M	246	140	156	90	106	66	12 in 5 yrs.	Congestive Heart Failure
24	SP	51	C	F	230	182	150	120	48	30	9 in 5 yrs.	Congestive Heart Failure
25	LW	50	W	F	230	150	150	118	80	32	50 in 4½ mos.	Congestive Heart Failure

R—Race. S—Sex. *All Blood Pressure Readings Expressed in mm. Hg. Var.—Variation.

Extremes of systolic and diastolic blood pressure readings observed in twenty-five unselected cases of hypertension with impaired renal function.

TABLE II
CASES WITH HYPERTENSION AND NORMAL RENAL FUNCTION

No.	Case	Age	R	S	High Syst.*	Low Syst.	High Diast.	Low Diast.	Syst. Var.	Diast. Var.	Observations	Apparent Explanation of Fall in Blood Pressure
1	JM	55	W	F	170	138	110	85	32	25	9 in 5 yrs.	Hyperthyroidism
2	TH	46	W	M	202	90	140	64	112	76	11 in 5 mos.	Coronary Thrombosis
3	KS	58	W	F	200	144	90	70	56	20	12 in 2 yrs.	Hyperthyroidism
4	NS	60	C	F	210	150	115	80	60	35	26 in 3 yrs.	Unexplained
5	BD	45	C	F	230	144	160	104	86	56	25 in 2 yrs.	Unexplained
6	HK	55	W	F	210	160	120	100	50	20	10 in 4 yrs.	Unexplained—C. N. S. Lues
7	LB	45	C	M	220	160	140	100	60	40	20 in 4 yrs.	Unexplained
8	TM	57	W	M	190	85	115	85	105	30	8 in 2 mos.	Coronary Thrombosis
9	JB	37	C	M	205	135	140	98	70	42	12 in 4 yrs.	Rest—Congestive Failure
10	RL	50	W	F	230	180	120	90	50	30	10 in 1 yr.	Rest—Congestive Failure
11	MC	50	C	F	265	160	150	100	105	50	46 in 4 yrs.	Unexplained
12	HS	49	W	F	220	144	160	85	76	75	17 in 1 yr.	Unexplained—?Drugs
13	MC	45	C	F	204	152	130	110	52	20	6 in 10 mos.	Congestive Failure
14	RS	65	W	F	280	172	120	78	108	42	10 in 8 mos.	Rest—?Drugs
15	RP	49	W	F	234	160	160	78	74	82	20 in 6 yrs.	Unexplained
16	PM	52	W	M	210	172	160	140	38	20	22 in 1 mo.	Congestive Failure—?Drugs
17	EM	37	C	F	265	198	170	130	67	40	51 in 7 mos.	Unexplained
18	JA	58	W	M	180	150	126	84	30	42	9 in 1 yr.	Congestive Failure
19	MT	61	W	F	230	168	130	100	62	30	9 in 6 mos.	Congestive Failure
20	PP	50	C	F	206	146	94	73	60	21	12 in 4½ yrs.	Unexplained
21	JS	59	W	M	240	182	140	108	58	32	7 in 10 mos.	Congestive Failure
22	JB	44	W	F	220	178	150	100	42	50	20 in 1 mo.	Menopause
23	DW	36	C	M	240	158	166	100	82	66	30 in 7 mos.	Rest—C. N. S. Lues
24	GS	60	W	F	260	180	138	92	80	46	32 in 3 yrs.	Unexplained
25	BC	52	W	F	230	170	120	88	60	32	20 in 5 mos.	Menopause

R—Race. S—Sex. *All Blood Pressure Readings Expres ed in mm. Hg. Var.—Variation.

Extremes of systolic and diastolic blood pressure readings observed in twenty-five unselected cases of hypertension with normal renal function.

some time during observation, with an average fall of 96 mm. Hg. and a 41 per cent decline from the average high systolic pressure of 234 mm. Hg. The diastolic pressure showed a marked downward variation along with the systolic, varying in its fall from 28 to 80 mm. Hg., with an average drop of 36 per cent from the average high diastolic of 146 mm. Hg. The downward fluctuations in this first group were apparently due to or accompanied by congestive heart failure in eight instances, uremia in six, rest in three, coronary thrombosis in one, severe nasal hemorrhage in one, and very severe cerebral arteriosclerosis in one. There was no logical explanation available for the remaining five.

The systolic pressure also fell in the hypertensives with good kidney function (Table II), the drop varying from 32 to 112 mm. Hg., according to the case, with an average fall of 80 mm. Hg. and a 36 per cent drop from the average high systolic of 222 mm. Hg. Somewhat similarly, the diastolic pressures fell 20 to 82 points with a 30 per cent fall from the average high diastolic of 134 mm. Hg. For this "non-nephritic" group no explanation of the variation was available in ten instances, hyperthyroidism was present in two, the menopause in two, coronary thrombosis in two, congestive failure in seven, and rest in two. Drugs may have influenced the fluctuations recorded in three patients of this group, but otherwise the series is free from drug interference.

The marked variations recorded in the "nephritic" group (Table I) were not expected. These fluctuations were due largely to the high incidence of terminal effects such as uremia and heart failure, and the relatively few instances of early nephritis. Early in its course diffuse nephritis frequently presents a blood pressure curve over a fair period of time, with little fluctuation.

In the hypertensive group without "nephritis," terminal events play a less striking part than in the nephritic group. Conversely, here, the earlier the case, frequently the greater the fluctuation. Furthermore, there were ten unexplained instances of variation in blood pressure in this group as compared to five in the "nephritic" group.

Mention should be made of the seeming association between blood pressure fluctuation in vascular hypertension and central nervous system syphilis (Fig. 1). We have been somewhat impressed with the frequency of this combination, but agree with Fishberg[1] that syphilis is unrelated etiologically to vascular hypertension. A marked fall in blood pressure

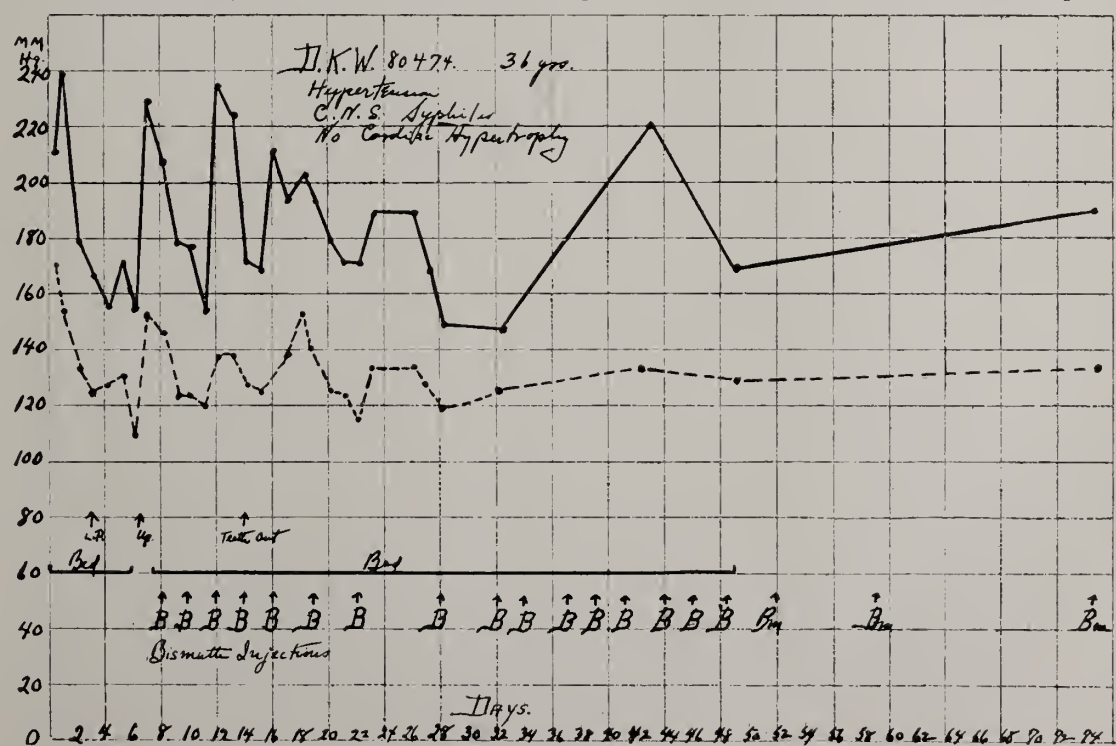

Fig. 1.—Marked fluctuations of blood pressure noted in a case of vascular hypertension associated with central nervous system syphilis.

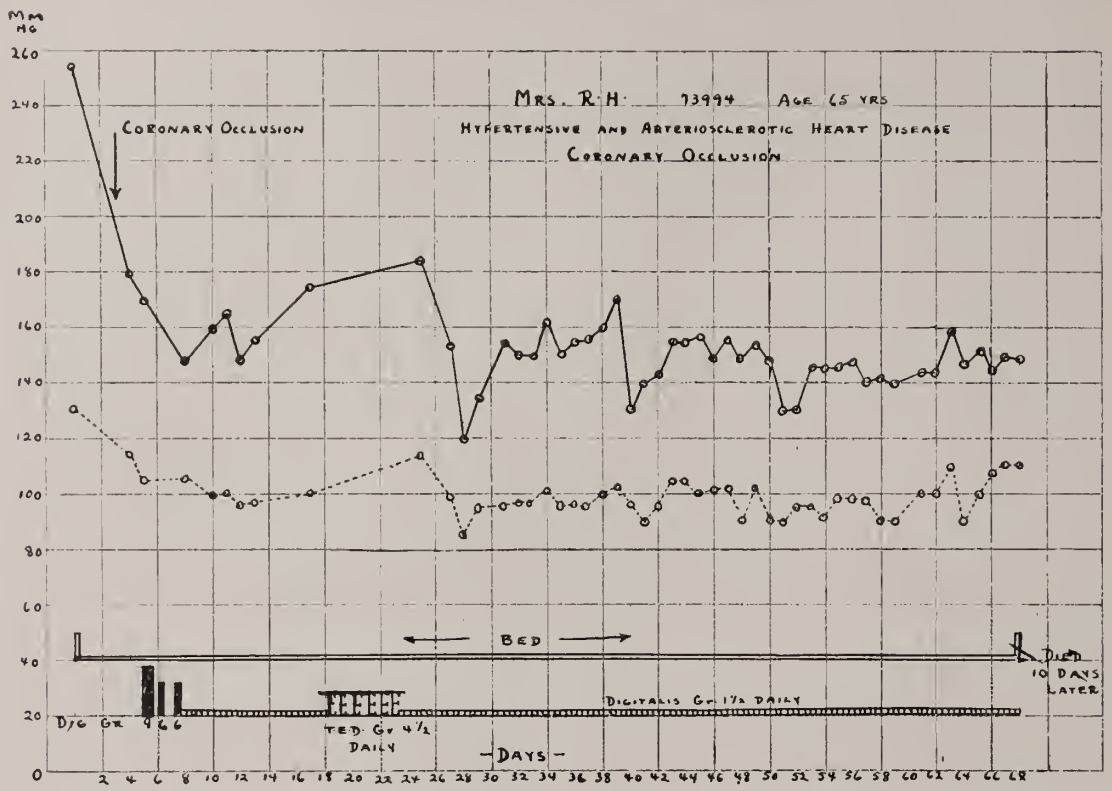

Fig. 2.—A drop in blood pressure following coronary thrombosis—the blood pressure remained low for two months after the coronary accident. Ten days after discharge from the hospital the patient died suddenly. T. E. D.—Theophyllin-ethylene-diamine.

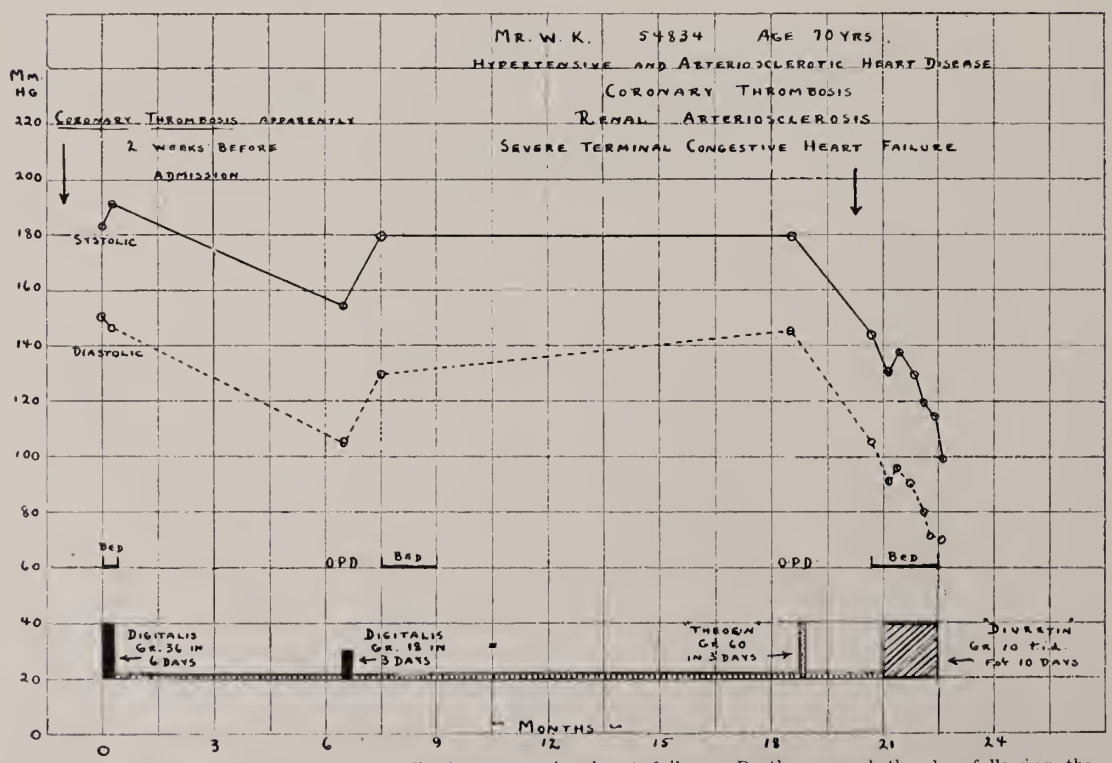

Fig. 3.—A sharp fall of blood pressure following congestive heart failure. Death occurred the day following the final blood pressure determination, and at autopsy definite evidence was found of a previous coronary thrombosis.

following coronary thrombosis is well known and requires no further comment (Fig. 2). Falling blood pressures in uremia and congestive heart failure (Figs. 3 and 4) are also matters of previous record,* though of less consistent occurrence than the fall noted in coronary occlusion.

patient happen to coincide with a low blood pressure reading.

Conclusions: (1) Marked systolic and diastolic blood pressure fluctuations occur in hypertensive patients with normal and subnormal renal function.

(2) In a fair percentage of these the cause

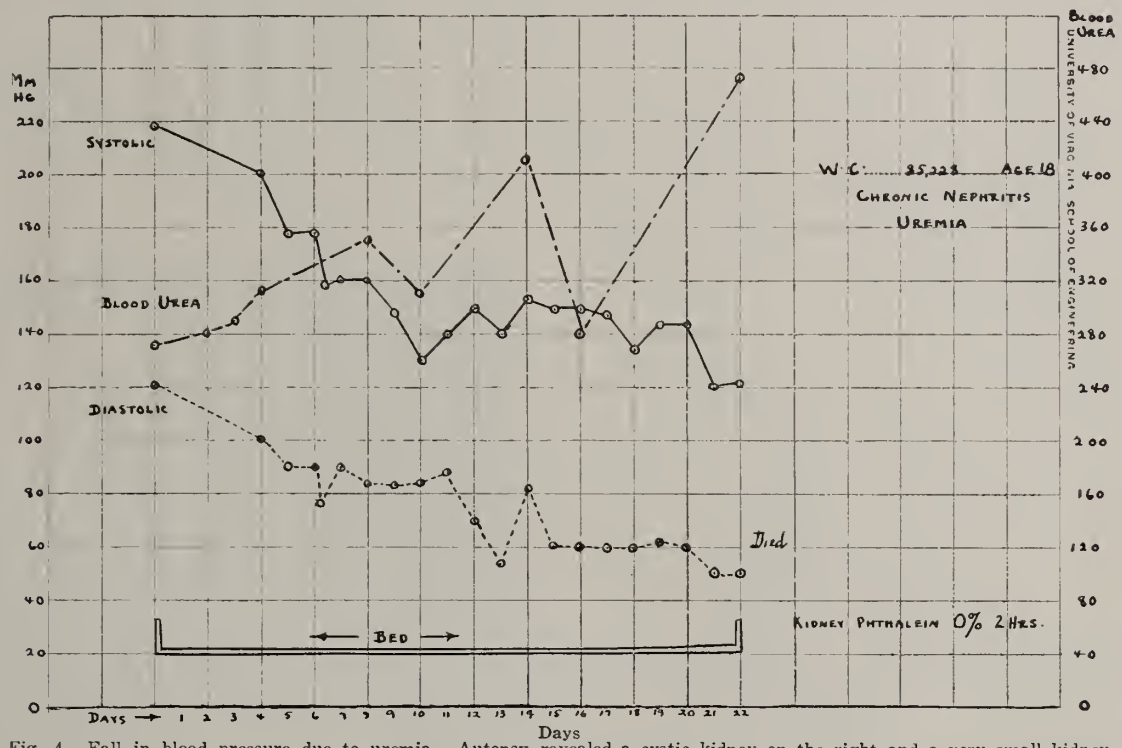

Fig. 4.—Fall in blood pressure due to uremia. Autopsy revealed a cystic kidney on the right and a very small kidney with chronic nephritis on the left.

One of the most important features of the entire study proved to be the not infrequent occurrence of a normal blood pressure reading associated with cardiac hypertrophy of hypertensive origin. Fourteen of the fifty patients had cardiac enlargement and at some time showed systolic pressures from 90 to 148 mm. Hg. In only three of the fourteen instances did the accompanying diastolic pressure exceed 90 mm. Hg. Ten of the fourteen had moderate to marked cardiac hypertrophy while the other four had a slight but definite increase in the size of the heart. Obviously the true cause of the cardiac enlargement might not be fully appreciated should a single examination of the

of the variation may be postulated often, however, spontaneous variation occurs without explanation.

(3) Enlargement of the heart without obvious cause accompanied by a normal or near normal blood pressure should stimulate repeated observation.

(4) A careful case analysis and prolonged observation should precede the administration of any drug designed to alter blood pressure in hypertension. If uncontrolled, studies directed toward the artificial reduction of high blood pressure lack conviction.

Grateful acknowledgment is made to Dr. A. D. Hart and Dr. Robert King, University, Va., for their help with this work.

*In many instances the blood pressure rises with congestive heart failure but falls later frequently to remain lower after the patient improves.

REFERENCES

1. Fishberg, Arthur M.: Hypertension and Nephritis. 1930. Lea and Febiger, Philadelphia.
2. O'Hare, J. P.: *Am. J. M. Sc.* 159:369. March, 1920
3. Mosenthal, H. O., and Short, J., Jr.: *Am. J. Med. Sc.* 165:531. April, 1923.
4. Ayman, David: *J. A. M. A.* 94:1214. April 19, 1930.
5. Fahrenkamp, K.: *Med. Klin.* 17:776. June 26, 1921.
6. Mueller, S. C.: Proc. Staff Meetings Mayo Clinic. 4:163. 1929.

DISCUSSION

DR. F. C. RINKER, Norfolk: I certainly have enjoyed the presentation by Dr. Wood. I agree with him thoroughly that we cannot take a hypertensive case and consider it to be a pathological case, that each individual case differs within itself, and that there are certain factors which may lead to hypertension. I also agree with him that we should certainly not rely upon drugs or ut lize drugs to relieve hypertension unless we have studied that case individually.

I should like to ask Dr. Wood if, in closing, he could not group some of his hypertensive cases with relation to the endocrine glands and ask, also, whether endocrine therapy would not relieve some of them permanently.

DR. WOOD, closing the discussion: No obvious glandular dyscrasia occurred in any of the cases reported, nor have we used any tissue extract in the treatment of high blood pressure

I am not a therapeutic nihilist, however, and I do believe that certain blood pressure reducing drugs may be valuable in selected cases of hypertension.

CLOSED INTERNAL PNEUMOLYSIS: AN AID IN THE PNEUMOTHORAX TREATMENT OF PULMONARY TUBERCULOSIS.*†

By I. A. BIGGER, M. D., Richmond, Va.

Artificial pneumothorax is well established as a valuable procedure in the treatment of pulmonary tuberculosis and should always be given first consideration when collapse therapy is to be instituted. There is, however, one serious obstacle to satisfactory treatment by pneumothorax. This is the frequent presence of adhesions between the surfaces of the parietal and visceral pleurae, which are usually located over the most diseased part of the lung and prevent its collapse. Matson[1] estimated that 40 per cent of the failures in pneumothorax treatment are the result of pleural adhesions preventing satisfactory collapse. To further emphasize the importance of pleural adhesions, he presented statistics obtained by studying the results in eight hundred and fifty cases treated by pneumothorax. In those who obtained a satisfactory collapse, 48 per cent were clinically well and 21 per cent had died. In those in which a satisfactory collapse was prevented by adhesions, only 13 per cent were clinically well and 50 per cent had died. Saugman and Gravesen[2] reported 79 cases of whom 37 obtained complete pneumothorax and 42 had localized adhesions. Of the 37 who obtained complete collapse, 70.2 per cent were able to work and 23.4 per cent had died of tuberculosis. Of those showing localized adhesions, only 33.3 per cent were able to work and 66.6 per cent had died of tuberculosis.

It seems therefore that intrapleural adhesions form a serious obstacle to the success of pneumothorax and should be removed if possible. If not possible, another method of collapse should be considered.

The adhesions may be divided by open or closed internal pneumolysis. Closed internal pneumolysis was devised by Jacobaeus[3] and first described by him in 1913. He used an instrument similar to a straight cystoscope to visualize the adhesions and divided them by a long slender cautery introduced through another puncture. Unverricht modified the Jacobaeus instrument so as to give much better vision, and this modification is the one most commonly used today. The method was slowly accepted and in 1921 Jacobaeus was able to collect only about 100 cases, 40 of which he had done himself. During the past few years there has been a gain in popularity, and pneumolysis is now practiced in a number of American clinics. In 1929 Head[4] was able to collect 357 cases reported by twelve operators. However, 150 of these were operated upon by Jacobaeus and 100 by Matson.

ARMAMENTARIUM AND TECHNIQUE.

The Unverricht instrument with separate cannula for the cautery is very satisfactory when one has become accustomed to working with both hands simultaneously. However, Davidson[5] has recently perfected an operating thoracoscope which permits visualization and cauterization through one instrument.

Before attempting closed internal pneumolysis, it is necessary to have good stereoscopic films so that the position and attachment of the adhesions can be accurately localized. After the adhesions have been localized, the thoracoscope is inserted one or two inter-

---

*From the Department of Surgery, The Medical College of Virginia.

Read at the sixty-first annual meeting of the Medical Society of Virginia, in Norfolk, October 21-23, 1930.

†These patients were from the Vanderbilt University Hospital and the Davidson County Tuberculosis Hospital, Nashville, Tenn.

spaces below them and usually in the posterior scapular line, although the point of insertion may vary considerably with the location of the adhesions. After the adhesions have been carefully studied through the thoracoscope and it has been decided that cauterization is possible, the cautery is inserted, usually in the axillary region, and placed against the adhesion under thoracoscopic guidance. A low current is then turned on and the cauterization proceeded with. The current should be turned off at frequent intervals to avoid overheating of the shaft of the cautery, as this may injure the tissues of the chest wall around the cannula and possibly the lung itself. As soon as the

Fig. 1.—Roentgenogram made nine months after institution of pneumothorax, showing a large cavity held open by adhesions.

instruments are removed, pads should be firmly strapped in the interspaces over the puncture wounds to prevent subcutaneous emphysema. If this precaution is not taken, a large amount of air may escape into the tissues and cause considerable discomfort.

Indications

1. Pneumolysis is indicated whenever cord- or band-like adhesions are present which prevent the collapse of cavities or otherwise diseased lung tissue.

2. It is also indicated when the presence of such adhesions necessitates high intrapleural pressure to collapse cavities or when such adhesions cause pain or persistent cough after refills.

3. It is occasionally indicated when sheet-like adhesions prevent satisfactory collapse, but only when there is sufficient room between the lung and chest wall to permit satisfactory vision at all times during the cauterization.

Contra-indications

1. Fusion of the two layers of pleura should be considered a contra-indication to pneumolysis, as some injury to the lung is almost unavoidable and the danger of empyema either mixed or tuberculous is considerable.

2. Very large serous effusion should contra-indicate pneumolysis, for large collections of fluid may lead to sinus formation at the point of puncture with a resulting pyogenic empyema. Tuberculous empyema should be treated by thoracoplasty.

3. Disease in the other lung or other organs of the body would have to be sufficiently serious to contra-indicate pneumothorax to be considered a contra-indication to pneumolysis.

Complications

The only complication worthy of serious consideration is empyema, either mixed or tuberculous. About 25 per cent of the cases in the series collected by Head developed persistent serous effusions. Unless these terminate in

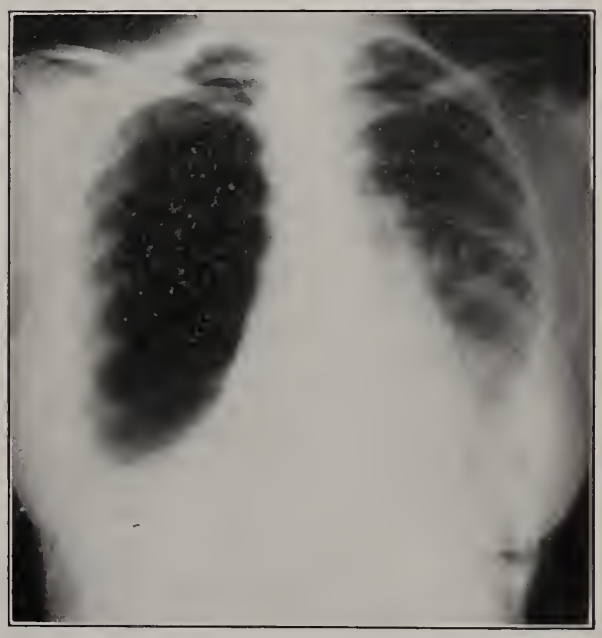

Fig. 2.—Roentgenogram made after the division of all except two apical adhesions. Cavity completely closed.

empyema, they are not of serious import. Furthermore, as stated by Head, about 50 per cent of these would have developed effusions without pneumolysis. Approximately 8 per cent of Head's collected series developed tuberculous empyema and 1.6 per cent developed mixed empyema. The mortality in the latter group is high, but tuberculous empyema may be cured by thoracoplasty or other measures.

Slight hemorrhage occasionally occurs, but only one case of fatal hemorrhage has been reported.

Extensive subcutaneous emphysema rarely occurs if care is exercised in the application of the dressings, and even when it occurs it is of no serious consequence.

When we consider the results obtained, it will be seen that the dangers from complications are relatively slight.

Results

In Matson's series of 100 cases of pneumolysis, 63 per cent were technically successful and 74 per cent were clinically successful. The late results are not given. In Gravesen's series of 26 cases, the late results were: 65 per cent were able to work and 31 per cent died of tuberculosis. In the 357 cases collected by Head, only 1.9 per cent died as a result of the operation.

Case Reports

I now wish to summarize the results obtained during the past eighteen months in eighteen cases treated by the Jacobaeus-Unverricht method of pneumolysis.

1. A satisfactory collapse was obtained in all cases, although other adhesions could still be demonstrated in several.

2. The duration of pneumothorax before cauterization varied from six weeks to nineteen months, with an average duration of eight months. There seemed to be little if any relationship between the duration of pneumothorax and the degree of reaction. The reaction seemed to depend largely upon the duration of the cauterization. The most severe immediate reaction occurred in a patient who had an extensive cauterization thirteen months after the institution of pneumothorax.

3. There was only one slight hemorrhage which was easily controlled by applying the cautery to the stump of the adhesion.

4. One patient who had no immediate reaction developed an elevation of temperature on the ninth day and several days later when the chest was aspirated was found to have a positive intrapleural pressure and purulent pleural fluid. Air was aspirated, but a manometer reading made the following day showed

Fig. 3.—Endoscopic appearance of the adhesions shown in first roentgenogram before and after cauterization.

a recurrence of the positive pressure. This persisted and in spite of aspiration and irrigation of the pleural cavity the fluid became increasingly purulent, so intercostal drainage was instituted. The bronchial fistula and empyema may have resulted either from the cauterization of lung tissue in the adhesion or from devitalization of an area of lung adjacent to the shaft of the cautery. The delayed development of infection suggests the latter. It is probable that this patient will come to thoracoplasty, which would certainly have been necessary if cauterization had not been done, as she had two large cavities held open by heavy adhesions.

5. Fourteen patients or 77.7 per cent showed very definite improvement following the operation. Two or 11.5 per cent had few symptoms before cauterization, but each had a heavy cord-like adhesion attached to the lateral chest wall which necessitated positive pressure to obtain collapse. They therefore showed little symptomatic improvement. One or 5.5 per cent had a rather prolonged temperature reaction following cauterization but when last examined had a normal temperature and appeared to be definitely improved. Only the patient who developed empyema was made worse by the operation.

It is too early to attempt to evaluate the late results in this group of cases.

Summary and Conclusions

Intrapleural adhesions seriously interfere with the results in a large percentage of cases

of pulmonary tuberculosis treated by pneumothorax.

Division of adhesions therefore is desirable if a safe method is available.

Closed internal pneumolysis is relatively safe when used in well selected cases but is dangerous in cases with fusion of the two layers of pleura, where injury to lung tissue is likely to occur.

Cord- and band-like adhesions are easily and safely cauterized and should be severed when they interfere with collapse.

Sheet-like adhesions are occasionally suitable for cauterization, but cauterization should not be attempted unless the entire adhesion can be visualized.

If collapse is interfered with by short sheet-like adhesions or fusion of the pleural surfaces, thoracoplasty is indicated.

References

1. The Cauterization of Adhesions in Artificial Pneumothorax by the Jacobaeus-Unverricht Method of Closed Pneumolysis. Ralph C. Matson. *Am. Review of Tuberculosis.* Vol. 19, page 233. 1929.
2. Pulmonary Tuberculosis (Surgical Treatment). J. Gravesen. Pages 53-54. William Wood and Co. New York, 1925
3. Endopleurale Operationen Unter der Leitung des Thorakoskops. H. Jacobaeus. *Beiträge Zur Klinik der Tuberkulose.* Klinische Beiträge. Vol. 35, page 1. 1915-1916.
4. Thoracoscopic Pneumolysis. Jerome R. Head. *Am. Review of Tuberculosis.* Vol. 20, page 692, 1929.
5. A Simplified Operating Thoracoscope. Louis R. Davidson. *Am. Review of Tuberculosis.* Vol. 19, page 306, 1929.

Discussion

Dr. Dean B. Cole, Richmond: I wish to thank Dr. Bigger for his excellent presentation of this most interesting subject. I recall when Jacobaeus first came here some nine or ten years ago and demonstrated this method at Bellevue Hospital in New York. It was a most spectacular demonstration and at that time had not been used in this country, and was generally thought not entirely practical. The possibility of hemorrhage and empyema were thought to be outstanding contra-indications. As I recall it at that time Jacobaeus had done this operation on some one hundred patients and gave his results on some seventy-eight of these The results he reported were most convincing. In the last few years this operation has been done by a number of surgeons throughout this country and has proven a most useful adjunct to pneumothorax.

THE USE OF THE ROENTGEN RAY IN THE DIAGNOSIS OF BRAIN TUMORS.*

By J. L. TABB, M. D., Richmond, Va.

The average physician considers a brain tumor a rare condition: at least he sees only a few in his practice, but we must stop and consider how many of our cases of apoplexy, sudden death, impaired mentality, motor or sensory nerve involvement, if brought to autopsy, would reveal a brain tumor. The correct diagnosis of brain tumors is now made much oftener than in the past. This is probably not due to the fact that brain tumors are on the increase, but is thought to be due to the improved diagnostic technic, which allows their detection.

Fig. 1.—Calcified glioma, left frontal lobe.

Brain tumors are by no means rare. This fact is impressed upon us by a report of Coleman, who states that the statistics of the Hospital Division of the Medical College of Virginia for 1925 have "brain tumor" recorded as a diagnosis oftener than any other tumor of the body, except tumor of uterus. The diagnosis of brain tumor is recorded four times as frequently as tumor of the breast. Of course, all of the diagnoses were not verified, and in judging the frequency of brain tumors, it must be remembered that the Hospital Division is fortunate in having a large and well organized neuro-surgical department.

Only the part played in the diagnosis by the Roentgen ray will be discussed. A careful neurological examination is most important and should be made in all cases. It should be made before the X-ray examination, as valuable information may be gained as to which side of the skull to place next to the films, or the advisability of securing certain films from an angle not usually used.

*Read at the sixty-first annual meeting of the Medical Society of Virginia, in Norfolk, October 21-23, 1930.

Aside from the pharyngeal pouch tumors it is very unfortunate that only a small percentage of brain tumors contain enough calcium to cause them to cast a shadow. When they outline, the diagnosis is usually certain. Calcification in the falx cerebri often occurs, is easily identified and, as far as we know, is without any definite clinical significance. Atheroma of the arteries, such as the circle of Willis, is rare, can usually be identified, but must be differentiated from a brain tumor. Calcification of the pineal gland is common in the adult and is not of any clinical significance.

Fig. 2.—Calcified brain tumor of left temporal lobe. Operation: Grayish tumor, soft, with a few small cysts containing fluid, probably glioma, left frontal lobe.

Let us now consider the non-opaque class of brain tumors; the ones which produce no shadow at all and which form the vast majority of tumors of the brain. Here we must depend on indirect signs—namely, the damage or change produced on the inner wall of the cranium, by the pressure resulting from the non-opaque tumor within or against the cranium and also on ventriculography and encephalography. The cranial changes may be roughly placed in four main groups:

1. Furrowing.
2. Separation of the sutures.
3. Absorption of the dorsum sellae.

Fig. 4.—Typical furrowing, due to increased intracranial pressure.

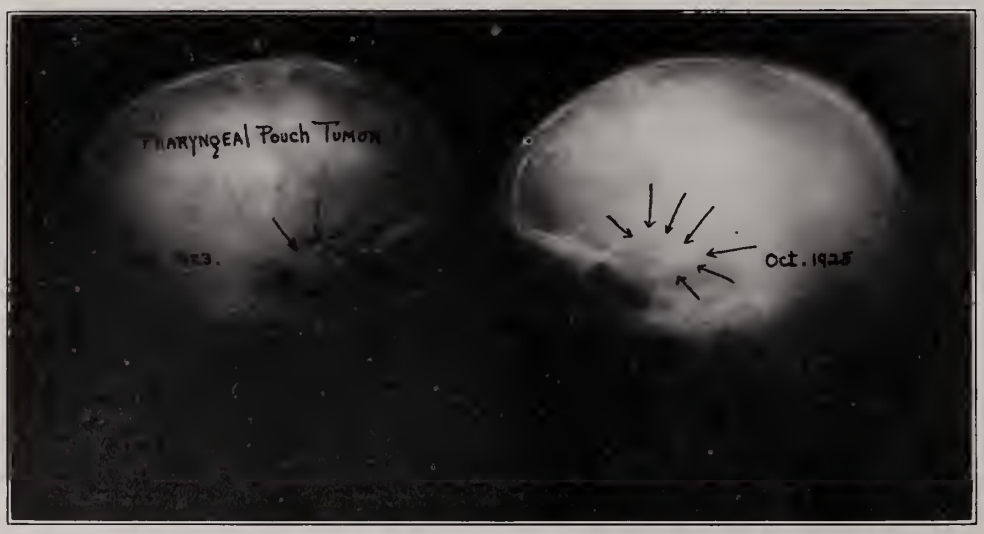

Fig. 3.—Left: Pharyngeal pouch tumor, January, 1923. Right: Same patient October, 1925. Note growth.

4. Bone destruction or bone proliferation. These will be taken up in the above named order.

1. By furrowing we mean a peculiar pitted appearance of the skull produced by the imprint of the convolutions of the brain against the inner table of the skull. It may seem strange that so delicate and soft a structure as

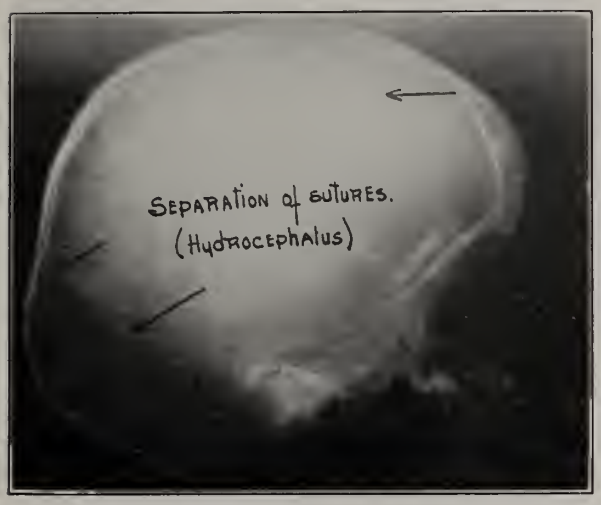

Fig. 5.—Separation of sutures from increased intracranial pressure. Patient age two years. Hydrocephalus.

the brain can wear away the hard, dense inner table of the skull. But there are other examples of this bone absorption produced by pressure of a soft tissue mass. An aneurysm will not only cause a destruction of the sternum but can even protrude through the opening. The vertebral bodies are often absorbed or destroyed from the same cause. Bone is frequently absorbed by pressure from an adjacent tumor and this peculiarity of bone to absorb under abnormal pressure is responsible for the rapid loosening of screws in a Lane's plate. Furrowing, then, occurs whenever the surface of the brain is pressed against the inner table of the skull and held there for a sufficient length of time for the convolutions of the brain to imprint themselves on the skull wall. The length of time necessary for these changes to show is still a disputed question. Schuller states that under favorable conditions the furrowing may be detected within a few weeks after the onset of clinical symptoms, but on the next page of his book the following is found: "The roentgenologic proof of the erosion of the inner surface of the skull is a sure sign of an increased intracranial pressure which has existed for a long time." Others believe that furrowing is a comparatively late sign, the increased pressure having been present for many months preceding the bone

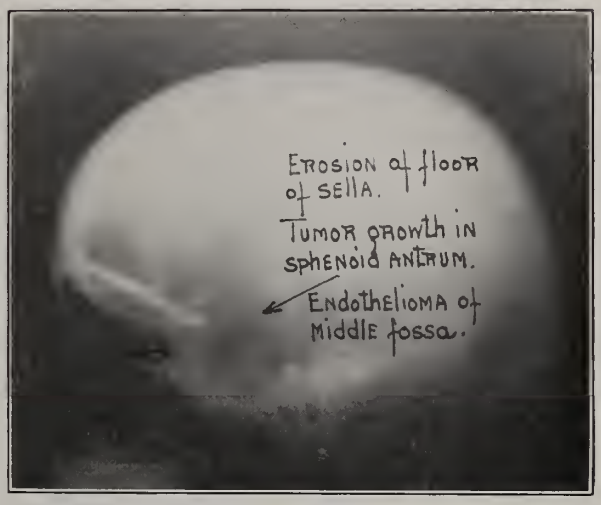

Fig. 6.—Note erosion of floor of sella and dorsum sellae and part of the growth in sphenoid antrum. Operation revealed endothelioma of middle fossa.

change. The writer, as yet, is not prepared to make any definite statement. My belief, however, is that the time must be expressed in months rather than in weeks. Practically all of the cases presenting this finding, which have

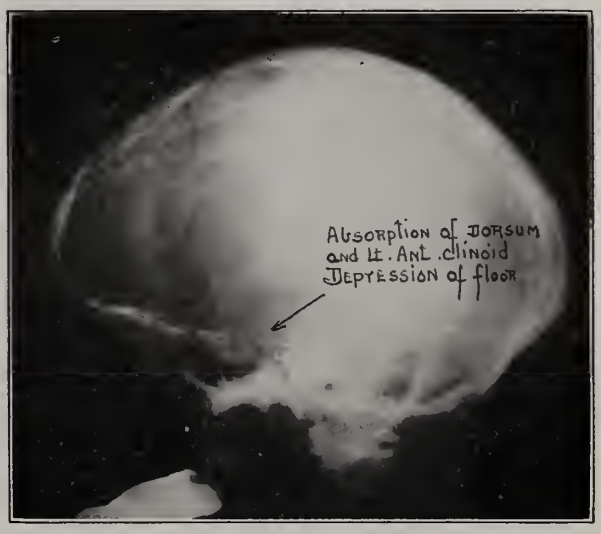

Fig. 7.—Absorption of dorsum sellae and left anterior clinoid process. The floor of the sella is depressed. At operation the intracranial pressure was too great to explore brain thoroughly. Needle punctures failed to locate the growth.

been examined by us, have had clinical symptoms for many months. Again, we have seen cases with very marked increased intracranial

pressure, and choked disc, which have certainly been present for a few weeks, which fail to reveal furrowing of the inner table. Furrowing, then is a pathognomonic sign of increased intracranial pressure.

2. Separation of the sutures. This condition usually occurs early in childhood when the sutures may be easily separated. This finding decreases in frequency as the age of the patient increases. After thirty years of age it is a very rare finding, and in old age is practically never present. Separation of the sutures is generally a sign of increased intracranial pressure, but a tumor adjacent to or in a suture will cause a localized separation.

3. Absorption of the dorsum sellae. (The

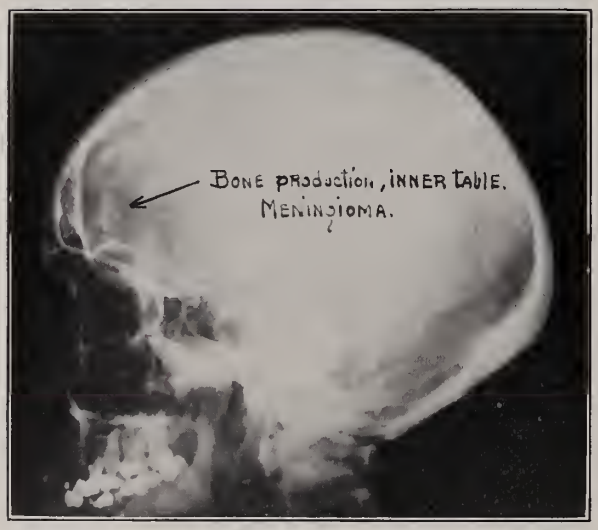

Fig. 8.—Bone production on inner table of skull, due to meningioma of right frontal lobe. Verified at operation.

appearance of the sella turcica also will be described under this heading.) The back of the pituitary fossa, or dorsum sellae, seems to bear the brunt of an increase in the intracranial pressure. The fact that the dorsum sellae has been absorbed does not necessarily mean that the tumor is adjacent to it. In fact, the dorsum may be completely absorbed as a result of a brain tumor as far removed from the sella as it is possible to have it.

The appearance of the floor of the sella turcica often gives valuable information. In severe intracranial pressure the floor often shows a moderate depression, but where the floor has been broken through or destroyed the indications are that the tumor is located in or adjacent to the sella turcica. In some instances the tumor mass can be clearly seen partially surrounded by air in the sphenoid antrum.

4. Bone destruction and bone proliferation. The purpose of this paper is to discuss strictly

Fig. 9.—Here are both bone production and bone destruction. The fine bone spicules are easily detected on the stereoscopic films. Pathological report: Fibro-sarcoma, probably of dural or periosteal origin.

brain or meningeal tumors, and therefore the description of the bone destruction or proliferation caused by tumors of the skull, such as sarcoma, metastatic carcinoma, et cetera, or

Fig. 10.—Bone destruction due to infiltration of tumor. Endothelioma.

Paget's and syphilitic osteo-porosis, will be omitted.

When a tumor is adjacent to the inner table of the skull the pressure on the inner table

from the tumor may be so great that pressure atrophy takes place, resulting in an absorption of lime salts and a thinning of the bone in this location. Again, in malignant growths, the

Fig. 11.—Probably meningioma. Patient refused operation. Has projectile vomiting, attacks of unconsciousness, and is nearly blind. Wassermann negative.

skull may be infiltrated and the bone destroyed by replacement of the normal bone with neoplastic material. This produces on the roentgenogram a rat-eaten appearance. More often, however, the tumor adjacent to the inner table at first exerts only sufficient pressure to act as an irritant, and nature as a protective measure produces new bone. This results in a thickening of the inner table forming an endostosis and often fine spicules of bone similar to a periosteal sarcoma are noted. Endostoses and fine new bone striations, then, are very significant of meningiomata.

There are two other signs of brain tumor which at times may be noted on the plain X-ray films. The first is a displacement of the pineal gland and, in the absence of asymmetrical development of the cerebral hemispheres, a most rare condition, is pathognomonic of an abnormal mass within the cranium on the opposite side to which the pineal gland is displaced. The second sign is an enlargement of the internal auditory canal and is seen occasionally as a result of an acoustic nerve tumor.

A large percentage of brain tumors fail to produce any changes in the skull that can be detected on the plain films nor can any shifting of the pineal gland be seen. In these cases ventriculography and encephalography are of the greatest help. This procedure consists of withdrawing the fluid from the lateral ventricles or spinal canal and replacing it with air. In this way the lateral ventricles are clearly outlined and at times the third ventricle can be detected.

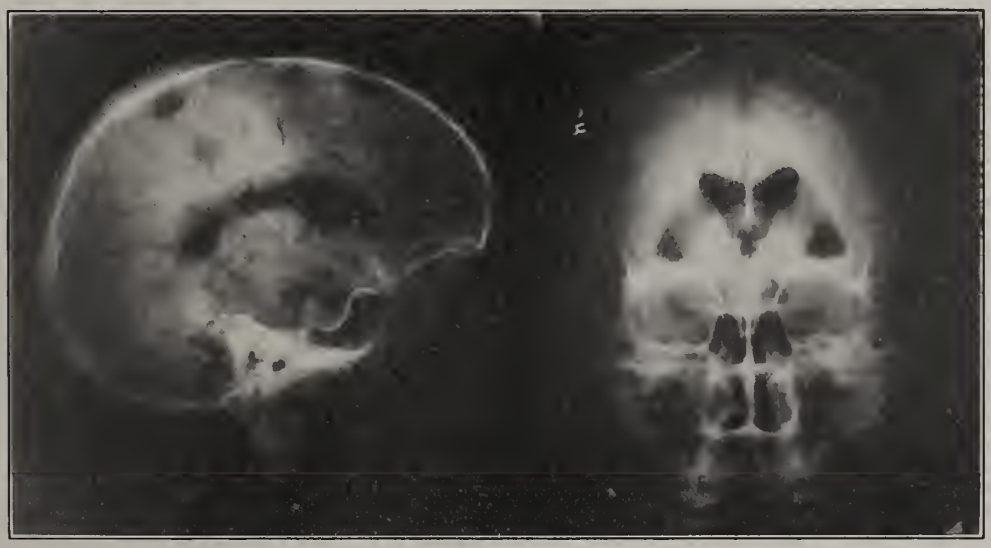

Fig. 12.—An encephalogram showing the appearance of normal ventricles and the symmetrical distribution of the air over the cerebral hemispheres. The ventricular septum is exactly in the median line.

The shape, size and location of the ventricles are seen and, by rotating the patient's head, it can be ascertained whether or not the air passes from one lateral ventricle through

the third ventricle into the opposite lateral ventricle. Ventriculography is the term used when the ventricle is filled with air by direct puncture of one or both of the lateral ventricles with subsequent X-ray. The term encephalography is used where the head has been X-rayed following the injection of air by way of a lumbar puncture. By this method, not only the ventricles are outlined but the air also spreads in the subarachnoid space over the cerebral hemispheres causing the convolutional impressions of the brain to cast their shadows on the X-ray film.

Fig. 13.—Left: Normal filling of left posterior horn. Middle: Poor filling of left anterior horn. Right: Ventricular displacement, to the right. Operative findings: Cystic glioma of left frontal lobe.

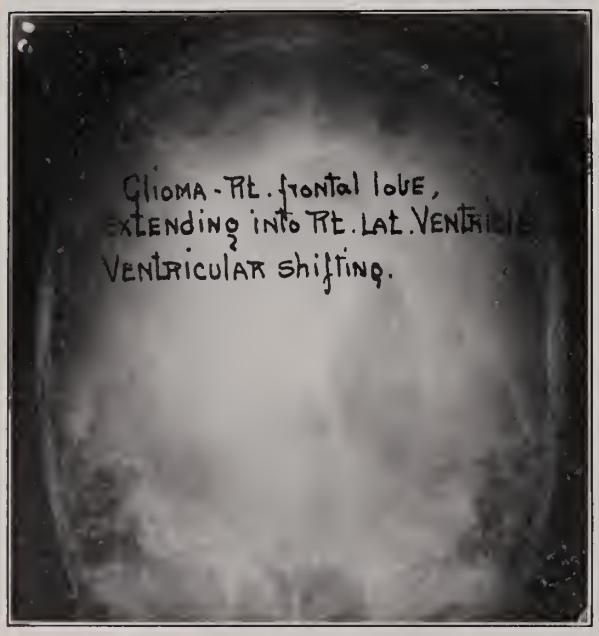

Fig. 14.—Glioma of right frontal lobe, extending into right lateral ventricle and causing the ventricular system to shift to the left. Verified by operation.

By ventriculography, then, we may ascertain the size, shape and position of the lateral ventricles and at times the third ventricle. By encephalography we ascertain the above mentioned points and also derive information concerning the subarachnoid fluid ways and the convolutions of the two cerebral hemispheres. It is obvious that a large subcortical tumor will obliterate the convolutions of the brain in the involved area and no air in the subarachnoid space will then be seen in that region.

The interpretation is based on the mechanical hydraulic effect which the tumor has on the ventricles or convolutional impressions. By mechanical effect we mean the shifting of the ventricular system, the compression of a ventricle or a portion thereof, a filling of the ventricle with the tumor mass, and the obliteration of the convolutional impressions. By hydraulic effect we mean the symmetrical or asymmetrical dilatation of the lateral ventricles, the dilatation of the third ventricle and the obstruction to the normal fluid ways of the ventricular and subarachnoid systems. Time does not permit a detailed discussion of the various appearances of the ventricles caused by the mechanical and hydraulic effect of the tumor. A few outstanding illustrations will have to suffice.

Displacement of the ventricular system to one side of the median line is almost conclusive proof of some abnormal mass in the cranium on the side opposite to which the ventricles are displaced. A compression of one ventricle or

an inability to fill it with air is indicative of a mass adjacent to or in that ventricle. Bilateral, symmetrical dilatation of the two lateral ventricles with obstruction to the passage of air from one to the other, indicates a tumor of the third ventricle obstructing the foramina of Monro. If air passes from one dilated ventricle to the other the obstruction is below the third ventricle and if the third

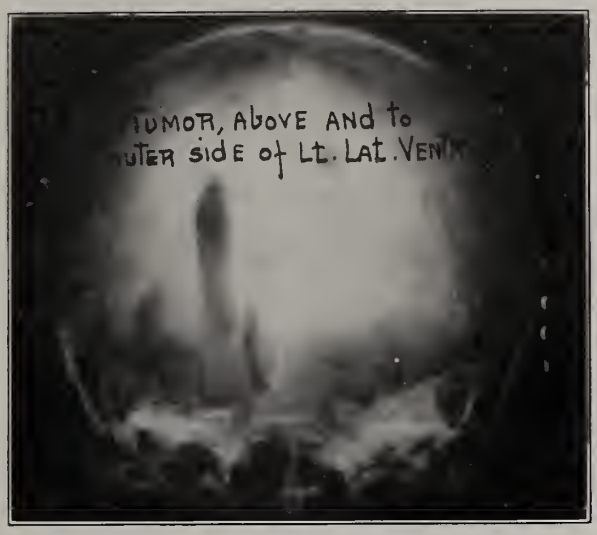

Fig. 15.—The left lateral ventricle is compressed and displaced downward and to the right due to a tumor above and to the outer side of the left lateral ventricle. Patient died the same day that air was injected and no exploratory operation or autopsy was performed.

ventricle is dilated the tumor is subtentorial.

Unilateral dilatation of a lateral ventricle with inability to fill the anterior horn points to a tumor adjacent to and obstructing the foramen of Monro on the side of the dilated ventricle. Numerous other abnormal findings resulting from the mechanical or hydraulic effect of a tumor could be mentioned but for sake of brevity the above will have to serve as illustrations.

There are other conditions such as arachnoiditis and cerebral atrophy which may now be diagnosed by a properly made encephalogram but, as these conditions are not brain tumors, they have not been discussed.

Ventriculography and encephalography, though very valuable, are not without danger and therefore these two methods are not suitable for hospitals where a competent neurosurgeon is not available at the time of the examination and for some hours afterwards.

McGuire Clinic.

Discussion

Dr. C. C. Coleman, Richmond: I think the papers of Dr. Tabb and Dr. Lyerly* must convince one that X-ray examination of the brain is a very important aid in the diagnosis of brain tumor. In the past few years the scope of air injections in the diagnosis of tumor has been greatly enlarged. In 1918, when Dandy proposed this for the localization of brain tumors, he used ventriculography almost exclusively. In recent years air has been injected through the lumbar spine in the case of epileptics, and in adults where the patient has marked subjective symptoms of cerebral origin. It has also been employed rather extensively in children. I think perhaps we have collected sufficient data on air injection into the lumbar spine to decide what cases should be given air injections. Parents with defective children often go from one clinic to another seeking relief for them. If they can, through an encephalogram, be convinced that the brain is undeveloped, or that it is the seat of some obviously hopeless anatomical condition, they accept with more complacency the advice not to waste their time and money in a futile effort to treat the child. In children who are moderately defective, encephalograms will often determine the site of the greatest brain involvement, and therefore, will have some bearing on the re-education agencies which are to be used.

Those who are familiar with either encephalography or ventriculography usually warn against its use promiscuously, feeling that neither is a simple or safe procedure under all circumstances. Unless one is prepared to operately promptly for brain tumor, a ventriculography may be a very dangerous procedure. Of course, encephalography is more dangerous than spinal puncture, and all who are familiar with brain tumor conditions, appreciate the fact that simple spinal puncture may be a very hazardous procedure.

A number of cases shown by Dr. Tabb are, of course, quite familiar to Dr. Lyerly and myself.

After all, clinical study of the patient is the most important part of the investigations, and clinical studies not only are essential to a clearer diagnosis, but necessary in order that the proper cases may be selected for air injection, whether the injection is done by the lumbar route or by placing air directly into the ventricles.

Dr. J. G. Lyerly, Richmond: I want to speak about one thing I do not believe Dr. Tabb mentioned. Dr. Naffziger has shown that in adults the pineal body is calcified in about 45 per cent of the cases. The X-ray will show this calcification. If there is a brain tumor in one hemisphere, that calcification will be shifted to the opposite side. That is of a great deal of aid in the localization of brain tumors; in fact, in some cases it will make the injection of air unnecessary, as the localization will be made by that.

Dr. Tabb, closing the discussion: Brain tumor is not a rare condition. Dr. Coleman has found that "brain tumor" is recorded at Memorial Hospital, Richmond, in 1925, four times as requently as "tumor of the breast."

I thank Drs. Coleman and Lyerly for their discussions. I mentioned very hurriedly, that shifting of the pineal body is pathognomonic of an abnormal intracerebral mass except in the very rare cases of asymmetrical development of the cerebral hemispheres.

*Dr. Lyerly's paper appeared in March, 1931, issue of the Monthly, pages 778-781.

THE CARE AND PROGNOSIS OF THE EXTRA-MURAL EPILEPTIC.*

By DAVID C. WILSON, M. D., University, Va.

The estimation of the number of persons subject to fits is still an impossibility. Yet the problem of fits is really the problem of epilepsy. It is probably true that every individual would develop a generalized convulsion with sufficient stimulation, but it is undoubtedly true that it is much more difficult to produce convulsions in one person than another dependent upon the presence or absence of a certain threshold lowering characteristic. This has frequently been shown experimentally.[1] Parker[2] demonstrates that a brain tumor in a certain locality may produce seizures in one individual while an almost identical tumor in the same locality in another does not; thus, showing that there is some inherent difference in this regard. Fay[3] believes that this difference is dependent on the water content of the intracranial cavity and the circulation of the spinal fluid. Others[4] believe that the hydrogen concentration of the body is the determinant; in other words, that a tendency toward alkalinity makes the epileptic more susceptible. Still others speak of the vasomotor instability of the epileptic, or consider convulsion an allergic phenomenon.

Besides the lowered threshold in those with chronic fits, however, there must be another element, namely, the sufficing stimulant. This irritating force is also important if we are to speak of the care of the epileptics, as therapy must be directed toward the characteristic that lowers the threshold, making the fits probable, or toward the irritant timing the convulsion.

There are approximately in the State of Virginia five thousand people having chronic fits,—that is one form of the epilepsies. From the surveys of certain localities such as the one recently made in Syracuse, New York, this would seem to be a very conservative estimate. We know that practically every physician has one or two among his patients, that our institutions for their care are over-crowded and that there are many hidden in the homes of the people who through fear of public opinion imbibe widely advertised nostrums without confessing the presence of the dread malady.

Howsoever, it is impossible that all so inflicted be institutionalized. Therefore, they must be treated outside the institution—in the home and by the general practitioner. All physicians working with the problem are convinced that the more nearly the life of the epileptic can be maintained on a normal level the less danger there is of his retardation. The process of ostracism, of separation from the group, and the narrowing of the outlook have a great effect on the personality, leading to disintegration. The best place to treat the disease is in the home, not only from an economic standpoint, but for the good of the individual patient. We should, therefore, get better results from the extra-mural therapy. It behooves us, then, to consider first what happens to the extra-mural epileptic, and, second, what forms of treatment can be carried on efficiently in the home.

The present study, as shown in Figure I, is based on seventy-five cases, diagnosed epilepsy, observed at the University Hospital during the last ten years.

Total No. of Cases	75	
Males	58	
Females	17	
Definite Heredity	27	
With Offspring	13	
Mentally Retarded	22	(29%)
Ward Patients	58	
Private Room Patients	17	

FIGURE I.

An attempt was made to discover what types of therapy had been employed and the present status of these individuals. Of this group eight were under twelve years of age. Five were aged fifty years or over. There were seventeen females and fifty-eight males. Twenty-seven had an immediate heredity, while thirteen had offspring. No cases were considered who had not had spells over a period of more than one year. One individual had had fits for thirty-two years. In thirteen cases there was a convincing history of trauma as a possible etiological factor. Twenty-two of the group were feeble-minded at the time of the first examination.

We were able to follow up to date from the seventy-five patients sixty-two. These are shown in Figure II.

Total No. of Cases	62
Cases Committed	5
Deceased	2
Improved and Working	25
No Change	22
Mentally Deteriorated	8
Of Twenty-five Improved Cases:	
No Treatment	6
Luminal	15
Bromide	4

FIGURE II.

*Read at the sixty-first annual meeting of the Medical Society of Virginia in Norfolk, October 21-23, 1930.

Five had been committed to state institutions. Two were dead. Twenty-five, a third of them, were working and apparently improved. The twenty-two feeble-minded showed no change, and eight new cases had deteriorated. Of the twenty-five improved cases, six had had no treatment and fifteen had luminal and four had bromides.

This study would suggest that about one-third of the epileptics could be improved and maintained as useful citizens while two-thirds are doomed to deterioration or to become a burden to the community and the State. However, thirteen of these cases had a definite history of trauma and three of them were luetics. Also, there were some whose spells had begun so late in life that arteriosclerotic changes had probably set in—cases of epilepsia tarda, according to Reisman.[5] Others were so young that the outcome of their malady was in no way determinable. Therefore, all cases not having had spells over five years; whose spells had started after fifty years of age; who were under twelve years; who had any known etiological factor; who had been sent to an institution; or, finally, whose present status was not definitely known, were eliminated. In other words, we selected a group whose disease process had been in existence at least five years and who had existed in the community throughout that period to determine the prognosis of the idiopathic extra-mural epileptic.

There were thirty such cases. A few facts about them are shown in Figure III.

Idiopathic Epilepsy of Five Years' Duration	
Total No. of Cases	*30*
Heredity	16
Spells At Least Once a Month	25
Mental Retardation	7
Improved and Working	16

Figure III.

Sixteen showed a clearly defined heredity. Twenty-five had had spells at least once a month when first seen in the Hospital, yet at the present time only seven showed mental retardation. Sixteen were apparently improved and were now able to maintain themselves. It is also interesting to note that all of the sixteen improved cases had been consistent in their therapy. The majority were on luminal while others used bromide.

In this group, then, of idiopathic epileptics living in the home, at least fifty per cent escaped degeneration. This is a very small series, but, when we remember that these are extra-mural cases having spells over five years, the results have some significance. It is also encouraging to note that the therapy employed, while often scanty, was apparently of some benefit. On the other hand, none of these cases was entirely relieved and most of them dared not stop their medication.

It would seem, then, that more should be accomplished, for, while some of the cases are improved, none are free from the menace of an attack. There were no cures.

In the beginning of the paper it was stated that any therapeutic approach must be an attempt to raise the convulsion threshold or to remove the exciting stimulus. A great deal of work is being done along both lines. Diethelm,[6] following the work of Ulrich, has shown that by controlling the chloride-bromide ratio until a thirty-three per cent bromide substitution is obtained, this drug can be used with good results over a long period without toxic symptoms and with some curative value. To do this, one must follow the blood bromide over a period long enough to establish this substitution and then maintain the bromide intake at this level. The production of a relative acidosis by starving has been tried and found of some value,[7] but this form of therapy has given place more recently to the use of a diet high in fats and low in carbohydrates, thus producing ketone bodies in the blood. At first this ketosis was thought to allow an acidosis to be produced, thus raising the threshold and reducing the possibility of convulsion.[8] Lately, however, this ketosis is thought to act by reducing the intra-cellular water,—in other words, to work by producing dehydration. Helmholz,[9] in a recent study, finds on the other hand that he gets results in children with the ketogenic diet that cannot be explained by dehydration, and claims thirty per cent well over a five-year period with others definitely improved. Other writers do not get such good results even in children, while in adults the diet has very little if any effect, except, perhaps, as a method of reducing the fluid content and as an aid in other forms of therapy.

Fay has been the pioneer in dehydration therapy. He noted the cortical atrophy found in epileptic brains, the lakes of spinal fluid over the cortex at operation on epileptic subjects, and the fact that convulsions were produced by flooding the brain with water. He so treated a series of cases by merely limiting the fluid intake to three or four hundred c.c. of

fluid daily. He has shown lesions in the Pacchionian bodies which seem to obstruct the outflow of spinal fluid and by means of the encephalogram that large numbers of epileptics have either cortical atrophy or an adhesive arachnoiditis, which was in turn causing obstruction to spinal fluid circulation. His results have apparently been very good, and he seems to feel that the control of the fluid balance is the control of the convulsive threshold and the answer to the epileptic therapy. Fay's ideas regarding blockage of the spinal fluid circulation can best be explained by referring to the diagram taken from his article.

Patterson[10] has shown that as a group a larger percentage of epileptics show allergic phenomenon than normals. Cures of convulsions have been reported by removing substances from the environment which cause allergic reactions. Pierce Clark[11] has emphasized the psychogenic factors in the disease and is quite an advocate for the maintenance of normal living conditions for the epileptic. He has given us a better understanding of the epileptic personality by psychoanalysis. Foerrester and Penfield[12] have studied the post-traumatic cases with much care. They localize the lesion by observation of the attacks and electric stimulation of the exposed cortex, the irritating scar, remove it by a clean cut, thus producing an innocuous cavity. The cortex has been divided by them into irritating areas where an old scar will produce a certain type of onset to the convulsion. They then study the cortex by encephalograms for a localized atrophy; if present and not in a vital spot, it is removed. Their results are very encouraging and offer much to this rapidly increasing group of subjects.

During the last year of the University Hospital an attempt has been made to follow a definite line of study in all cases with fits. The environment and the mental age of the patient are first considered, because we feel that a markedly deteriorated case offers little from therapy. Next, a complete neurological survey is made which is followed by an encephalogram. This latter demonstrates the presence or absence of general cortical atrophy, of adhesive arachnoiditis, localized atrophies or asymmetrical ventricles. In the presence of marked cortical atrophy it is felt that the cause of the convulsive state is demonstrated and that very little can be done to improve the patient, although he may be maintained at his present level. However, if the atrophy is localized and in any way can explain the patient's seizures, exploration is certainly warranted. If the history suggests allergy, skin tests are done, and, finally, an attempt is made to readjust the patient to his home environment. In children with cooperative parents, a ketogenic diet is prescribed, while in adults if sufficient time is available the bromide substitution is attempted. If bromide cannot be used, luminal is employed. In all cases dehydration is prescribed by limiting the fluid intake to five to six hundred c.c. daily. There have been fifteen patients consistently treated as shown in Figure IV.

Report of Cases Treated Last Year

Total No. of Cases	*15*
No Improvement	3
Improved	12
Bromide and Dehydration	3
Ketogenic and Dehydration	2
Luminal and Dehydration	4
Allergic	2
Psychogenic	1

Figure IV.

Three of these have shown no improvement. Luminal, bromide, ketogenic diet and dehydration have all been tried without success. They were adults, however, among whom no claims for ketosis are made. Also, it must be stated, dehydration was not consistently enforced. Twelve, however, have shown definite improvement. One seemed to be a *bona fide* case of allergy and has had only one spell in six months. Still another showed an eosinophilia with a history suggestive of sensitization. The others responded mainly to dehydration, although in each case the therapy was mixed. However, from the results in these cases it would seem that the control of the fluid intake was a factor in their betterment.

Epileptics, then, showing no abnormalities in the encephalogram and no marked deterioration can be treated at home with some hope of success. If one form of therapy fails, we have still others in our armamentarium. The cases with cortical atrophy should respond to dehydration, and quite a number may be found to be post-traumatic, where trauma was not formerly suspected.

In conclusion, the home and the normal environment is undoubtedly the proper place for the undeteriorated epileptic. The epileptic personality, as shown by Notkin,[13] is a product of his fits and his environment. Therefore, by the use of the ketogenic diet in the children, when feasible, by well controlled bromide

therapy, by luminal, and, perhaps, above all, by the control of the fluid intake a great deal can be done for this large class of suffering humanity.

BIBLIOGRAPHY

1. Elsberg, C. A., and Pike, F. H.: "The Influence of a General Increase or Diminution of Intracranial Pressure Upon the Susceptibility of Animals to Convulsive Seizures." *Am. J. Physiology.* 76:593-597. May, 1926.
2. Parker, H. L.: "Epileptiform Convulsions. Incidence of Attacks of Intracranial Tumors." *Arch. of Neur. & Psy.* 23:1032-1041. May, 1930.
3. Fay, Temple: "Some Factors in the Mechanical Theory of Epilepsy with Especial Reference to the Influence of Fluid and its Control in the Treatment of Certain Cases." *Am. J. Psychiatry.* Vol. VII. No. 5. March, 1929.
4. McQuarrie: "Epilepsia in Children: Relationship of Water Balance to Occurrence of Seizures." *Am. J. Dis. of Children.* 38:451-457. October, 1929.
5. Reisman, D., and Fitz-Hugh, F., Jr.: "Epilepsia Tarda." *Annals of Int. Med.* 1:273-282. November, 1927.
6. Diethelm, Oskar: "The Bromide Treatment for Epilepsy in the Dispensary." *Arch. of Neur. & Psy.* 664-667. March, 1929.
7. Geylin, H. R: "Factors of Ketogenic Diet." *Annals of Int. Med.* 2:678-681. January, 1929.
8. Peterman, M. G.: "Relation of Clinical Influences, Including Diet and Endocrine Disturbances to Epilepsy." *J. A. M. A.* 90:1427-1429. May, 1928.
9. Helmholz, H. F.: "Eight Year's Experience with the Ketogenic Diet in the Treatment of Epilepsy." *J. A. M. A.* 95:707-709. September, 1930.
10. Patterson, H. A.: "Protein Sensitization in Epilepsy. Study of One Thousand Cases and One Hundred Normal Curatives." *Arch. of Neur. & Psy.* 17:427-443. April, 1927.
11. Clark, L. P.: "Further Contribution to Psychology of the Essential Epileptic." *J. of Nervous and Mental Dis.*, 63:575-585. June, 1926.
12. Penfield, Wilder, and Foerrester, O.: "The Structural Basis of Traumatic Epilepsy and Results of Radical Operation." *Brain.* Vol. 53: Part 2:99. 1930.
13. Notkin: "Epileptic Manifestations of a Group of Schizophrenic and Manic Depressive Psychosis." *J. Nervous and Mental Diseases.* 69:494-521. May, 1929.

DISCUSSION

DR. J. H. BELL, Colony: I wish to compliment Dr. Wilson on his very excellent handling of this exceedingly complicated and difficult medical problem. Epilepsy is not a disease entity, but a syndrome, and the problem of the fit, as he states, which is purely symptomatic, is the problem of epilepsy. And why some persons should react by a convulsion to a brain tumor or cerebral hemorrhage in a given locality, while others do not, can be most reasonably explained by a difference in susceptibility in the finite structures of the nervous system to irritation, in different persons. We know that cerebral hemorrhages in some cases will produce convulsive disorders, while others with the same amount of hemorrhage in the same locality escape, and conversely there are cases on record in which a cerebral hemorrhage relieved the convulsions, possibly by interrupting the transmission of impulses through the cortico-spinal tract. Dr. Wilson has emphasized the point that there must not only be a lowered resistance, but also a sufficient stimulus in the production of the convulsive phenomena. It is important then to know not only how the trigger is pulled, but also what pulls it, and the explosive theory, which sets forth that there is a general widespread change in the brain chemistry, dependent upon sudden metabolic reverses, such as may be produced by anaphylaxis, anoxemia, and alkalosis, seems the most fruitful for investigation at this time. The types of cases received into institutions are usually well advanced in deterioration and are not the most promising for either investigation or therapy, as the majority of them, if carefully studied, neurologically, will show symptoms of lesions of the central nervous system, and at postmortem we find that grave, pathological changes have taken place in the brain and meninges perhaps many years earlier, such changes as flattening of the frontal lobe, shallowness of the sulci, dilatation of the ventricles, petechial or large hemorrhages and arachnoid adhesions. More hopeful results and positive findings of importance to the therapy can therefore be expected in the study of a large series of extra-institutional epileptics who are not deteriorated and who do not have such grave pathology.

I think Dr. Wilson is performing a real service in the investigation of this type, and while his series of cases is perhaps yet too small for any very definite conclusions, he has certainly been able to show the value of the therapy he is outlining. It is a well-known fact that deficient oxygen intake, deficient oxidation of waste products in the body, and a general lowering of the body-tone, are important factors in the production of seizures. And the institutional epileptics who carry on most successfully are those that can be kept in the open air and engaged in occupations that require a moderate output of physical exertion: muscular activity serving to oxidize the waste products, to increase the intake of oxygen, and to strengthen the body generally. The production of acidosis by ketogenic diet is, I think, only warranted in children who are having a number of seizures daily. The starvation of older epileptics to the point of acidosis for a temporary remission of seizures is not good therapy, the patient is not receiving a sufficient quality or quantity of food elements to replace normal cell destruction, his general resistance is lowered, he becomes more susceptible to infectious diseases and infections, and his last state may be worse than the first. Study of the allergic reactions in epileptics seems fruitful, and I would like to see more of this done on extra-institutional cases; also investigation of the effects of hypo-function of the pituitary and thyroid glands. The psychogenic factor is, as Dr. Wilson states, a most important one, and through psychiatry we have been able to learn much of the epileptic's personality that was heretofore hidden.

The neurological mechanism of epilepsy, has, I think, been accentuated in the study of this disease somewhat to the detriment of valuable and, perhaps, most startling revelations that may come through an equally searching investigation of the bio-chemical factors, and I very much hope that in the future this phase of the disease may receive its share of attention.

In closing, I wish again to express my appreciation for Dr. Wilson's very interesting and instructive paper and to express the hope that he may be able to extend his investigations to include a search-

ing study of the explosive theory of convulsions, which has for its hypothesis a sudden and widespread change in the chemistry of the brain, due to such sudden metabolic changes as may be produced by anaphylaxis, anoxemia, and alkalosis.

Dr. J. S. DeJarnette, Staunton: I have been treating epilepsy for forty years at the Western State Hospital at Staunton At the same time I have been able to read the Bible about the man who fell into the water and fell into the fire, who came to the disciples and they could not do a thing. The only thing I have heard that helped him was when he came to Christ; He waved his hand, and the man was cured. Christ said it was done by faith. I have seen very few epileptics cured. In treating epilepsy our treatment is this: Give luminal, 1½ grains, at bedtime and give salts Tuesday and Friday mornings; give no meat for supper. By doing that we find we have cut out seventy-five per cent of the convulsions.

Now, what is epilepsy? The old definition was that it was a sudden, local, violent, occasional discharge from the cerebral cortex, that it was a chronic disease and generally incurable. When these people come to you you find that one symptom is that they all say they are getting better, and another is that they are great Bible readers; while the manic-depressive is a great sweeper with a broom.

I want to give you this parting shot—if you give luminal to an epileptic, give it regularly. If you stop it he will go into what is called status epilepticus, and if you once have seen it you do not want to see it again. He goes into coma; the temperature goes to 107; and he passes out. I have tried everything I know of, but often they pass out. I believe it is one of the diseases in which the temperature continues to rise after death.

CONGENITAL HYPERTROPHIC STENOSIS OF THE PYLORUS.*

By WILLIAM B. McILWAINE, M. D., Petersburg, Va.

In reviewing the early and modern literature on the subject of congenital hypertrophic stenosis of the pylorus, one is struck with the gradual, but persistent trend of the writers and investigators to be less and less certain of what constitutes a correct diagnosis.

With the influx of physicians dealing exclusively with pediatric problems, the subject was one of great interest and much literature, largely because of the high mortality of the operative procedures then used. There was a great deal written about these procedures and the unsatisfactory results. Not so much was written about the diagnosis presumably because the symptoms of the disease were to them evident. However, after the introduction of the Rammstedt operation and some of its slight modifications, the mortality dropped so low that most pediatrists advised operation as soon as the diagnosis was positively, or in some cases even probably, arrived at.

During this period an infant with the so-called classical symptoms of projectile vomiting, loss of weight, constipation, visible waves of peristalsis and a questionable mass in the abdomen was diagnosed as a case of hypertrophic stenosis of the pylorus, and operated on with a percentage of successful results that was indeed gratifying. During this period Stenosis and Operation held the ascendency in the medical mind.

However, medicine being as it is and should be, a restless sea ever changing, never satisfied, the scientific mind searching for more light on the subject of causes, the pleasant pastures of classical symptoms—stenosis, operation—were rapidly invaded by the advent of the knowledge that a drug, atropine, and the feeding of a formula of thick cereal would prevent vomiting and so enable these little ones to gain, grow and develop. The medical mind, through its literature, began to swing slowly at first, but like the oft quoted pendulum, gained momentum until the picture changed to one of classical symptoms—Spasm of the pylorus, Medical treatment. For the past few years, judging from the literature on the subject, the minds of the mass of writers are in a turmoil,—some claiming on the one hand that operation, early and without procrastination is the best therapeutic measure for these infants, others, that operation is rarely ever needed, some even going so far as to report eight out of ten cases of hypertrophic stenosis of the pylorus cured by the use of phenobarbital (commonly called luminal), and others by the use of vitamin B, plus other time honored measures.

Naturally, one wonders why the divergent opinions on a subject which years ago were thought to be a closed one. The reason is evident from the literature. It is due to the fact that the pathological anatomy of the condition, instead of clearing up the subject, thus far is the causus belli of the uncertain, wavering and widely divergent opinions.

There used to be only the question of stenosis of the pylorus and spasm of the pylorus, but more recently two other claims are thrown into the already hectic struggle which bids fair to make the next decade a gorgeous battlefield as to the cause of the so-called hypertrophic stenosis of the pylorus.

Briefly outlined, the four main theories as to the underlying cause of the condition are:

*Read at the sixty-first annual meeting of the Medical Society of Virginia, in Norfolk, October 21-23, 1930.

1. A real, genuine, congenital stenosis of the pylorus, consisting of a ring of hard fibrous muscle tissue occluding the pyloric orifice.

2. A spasmodic condition of the muscle fibers around the pylorus by the constant state of contraction due to the irritable nerve endings, causing an occlusion of the pyloric passage.

Under one and two, I will quote from a paper of Dr. C. Ulysses Moore et al., of Portland, Ore., as follows: "The underlying pathology considered responsible for these symptoms is spasm of the pylorus with or without an accompanying hypertrophy. Arguments have waged for years as to whether the hypertrophy preceded the spasm or the spasm caused hypertrophy.

"The adherents of the tumor theory believe that it is due to faulty embryonic development which results in an actual stenosis of the pyloric orifice. This leads to a definite hypertrophy caused by the increased effort necessary to force the food through the smaller orifice. However, the idea of Sauer seems more tenable: 'In the fetus there is no pyloric valve as in the segment, known as the canalis pylori.' Wachenbein showed that the diameter of the pyloric musculature of the fetus is often greater than that in infants a few weeks old. In his opinion this furnishes an 'analage' for subsequent pyloric growth. A persistence of this transient, normal condition gives a primary anatomic basis for the origin of stenosis. In addition, the infolding of the mucosa may contribute appreciably to the obstruction by producing a valve-like closure.

"The persistence of hypertrophy months after spontaneous recovery or years after posterior gastro-enterostomy proves, according to Sauer, that the hypertrophy is not dependent on the spasm. The clinical picture on the other hand is dependent on the spasm, whether accompanied by hypertrophy or not. The numerous autopsies, performed on infants who died of other causes months after symptoms of stenosis had spontaneously disappeared, showed a persistent hypertrophy, which proves that hypertrophy alone need not elicit symptoms. Koplik reported never having seen a case of hypertrophic stenosis with palpable tumor in which there was no spasm. The spasm as well as the hypertrophy affects not only the pyloric ring, but Balan holds that it may involve the entire pyloric portion of the stomach, while Pehu and Pinel report in their exhaustive studies that there is hypertrophy of the whole stomach. Heubner believes the spasm to have its seat not in the pylorus but in the entire stomach wall. He states that this gastro-spasm occurs in predisposed infants whose entire gastric muscularis is hypertrophied.

"Carlson and Ginsberg report either a hypertonicity or hypermotility of the empty stomach of infants with congenital pyloric stenosis, pylorospasm, and chronic vomiting. Workers on the nervous control of the pylorus agree that the vagi and splanchnics may be either motor or inhibitory to this region, depending upon the existing tone of the pylorus. So, when once started, we may easily have a vicious circle. The early degenerative change along these nerve pathways, either the splanchnic or vagus or both, lead to an increased nerve stimulus to the pyloric antrum with hypermotility and partial obstruction."

In addition to the two theories above, a third and fourth have been added as follows:

3. A general irritability of the entire central nervous system, especially of stomach, brain, and vomiting center therein.

Under three I shall quote the above named authors: "Under this hypothesis, hypertrophic pyloric stenosis is considered simply as an advanced degree of pylorospasm. Pylorospasm and pyloric stenosis are the dominant features of a general state of hypertonicity.

"The autopsy findings upon which these tumor and hypertrophy theories are based is rather variable. In general the stomach is dilated, often to twice its normal size, and its wall is thickened or not according to the degree of distention. Histopathological studies of the pylorus have shown that the circular muscle fibers are chiefly involved. Strange to relate, no such study has included the nerves controlling this portion of the gastro-intestinal tract. In spite of this lack of neurological study, Elterich states that 'the majority of writers attribute the disorder to an imbalance of the autonomic or involuntary nervous system, which, of course, consists of two divisions, the parasympathetics and the sympathetics, the functions of which are opposing.' "

Under the theory of irritation of the vomiting center, I shall also quote from a paper of Dr. E. J. Barnett, of Spokane, Wash.:

"The 'vomiting center' in the brain must be involved in this congenital lesion, otherwise it would be difficult to explain why phenobarbital is apparently so specific for the control of the projectile vomiting. It has formerly and usually been stated that the vomiting in pyloric stenosis and pylorospasm is entirely mechanical in the origin. We must now appreciate that the vomiting in this condition may also be cerebral and influenced by excitability of the 'vomiting center.'

"This 'vomiting center' has normally streaming into it afferent emetic impulses, the most important path being along the vagus, and has discharged from it efferent impulses. In this way the 'vomiting center' coordinates in an orderly sequence the various movements and inhibitions necessary for emesis. The 'vomiting center' in cases of pyloric stenosis must become more sensitive from gastric irritation of the vagus or sympathetic nerve endings, and vomiting results."

4. A lack of vitamin B in the mother before the birth of the child and its effect on the motor nerves in the pylorus of the infant.

Under four, I quote again from Dr. Moore: "While studying the various effects of a lack of vitamin B complex on albino rats, we were surprised to find, especially on the young of the second generation, a clinical picture characterized by an enlarged and very firm abdomen, accompanied by extreme emaciation. At autopsy the stomach was found to be enlarged to several times its normal size and to be so packed with milk curd that on extrusion the curd made a perfect cast of mucosa. As rodents cannot vomit, there had been repeated packing of each day's nursing into the distended stomach. An examination of the vagus nerves of these animals showed myelin degeneration, a finding typical of beriberi. In cases in which the gastric distention was mild or cured by atropine, the animals later developed polyneuritis.

"Pyloric obstruction appears, therefore, to be one manifestation of vitamin B deficiency with resulting defective myelinogeny.

"The diet of the average American mother is normally very low in vitamin B, although she needs during pregnancy and lactation for the protection of her infant three or four times the amount of this factor necessary for her own well-being.

"In our laboratory a deficiency of the vitamin B complex in the maternal diet of rats has produced pyloric obstruction in the young. Other phases of the deficiency found in the same individuals or littermates are hemorrhage and polyneuritis.

"In the animals thus affected the motor nerves to the pyloric region show myelin degeneration, the typical pathology of vitamin B deficiency."

To resume the discussion of clinical hypertrophic stenosis of the pylorus, naturally if the infant is not born with a ring of hypertrophied muscle around the pylorus, it cannot be called a congenital affair, and we must look to spasm alone causing the symptoms. The main clinical argument against a congenital stenosis is that according to most authors the main symptom, vomiting, does not occur until the second or third week, and yet it does not seem plausible that a spasm would start all of a sudden, out of a clear sky, two or three weeks after birth, especially as most of these babies are breast fed from birth until vomiting begins, and so there is no evidence of any mechanical irritation of the nerve endings around the pylorus.

The theory of the whole affair, being of central origin in the vomiting center in the brain, seems rather illogical in the face of autopsy reports as also the vitamin B theory, though reports on this theory will be awaited with interest as, should it be proven by other experimental work, and autopsy reports, it will give us a useful weapon for preventing this condition. It is very evident then why the varying ideas as to diagnosis and the uncertainty of diagnosis arise when the underlying cause is vague itself. Two decades ago it was—Stenosis, Operation. During the last decade—Spasm, Medical treatment. We are now entering a decade that may be—Central nervous system, Drugs, or Vitamin deficiency, Prevention.

To arrive by such a circuitous route at practical facts seems quite a shock but, after all, theories are just theories until proved, and the condition of hypertrophic stenosis of the pylorus remains, at least up to the present writing, a fact and quite a disturbing one both for baby and doctor.

We have then an infant here four weeks old with a history of vomiting everything it eats, at times forcibly, a loss of weight from birth of several pounds, and a history of no normal stools, maybe movements but not normal.

On examination we find some emaciation,

definite waves of gastric peristalsis; on palpation we feel or think we feel a small mass in the abdomen on the right side, between the lower border of the ribs and the umbilicus.

What are we going to do? Most authors, in their minds uncertain, would say, "Let's give it a try on medical treatment, not making a definite diagnosis, but waiting for the therapeutic test." This may be all right, but it is not good medicine. The best medicine would be, as I think our motto should be "Be sure you are right then go ahead."

What then can aid us? The X-ray? I could quote here conflicting opinions that would leave you in a more befuddled state than Southside Virginia moonshine, but I will just say that opinions vary as widely as to its value as do the opinions as to the pathology. Some say it is of great value, some of no value, and some damn it with faint praise. Well then, if we have nothing to help us in our diagnosis except the individual case history and examination, what is of significant value in a differential diagnosis between stenosis of the pylorus which diagnosis means in my opinion, operation, and spasm of the pylorus, which in my opinion means, medical treatment? I can think of only two. First, no normal stools. From the literature and in my own meager experience, a case of congenital hypertrophic stenosis of the pylorus gives a history of having had no normal stools. A spasmodic condition does not give such a flat, unequivocal history as to this point.

Second, the palpation of a constant mass about the size of a peanut to the right, a little above the umbilicus.

Both conditions, spasm and stenosis have loss of weight, so we can get no help there, though it *may be more rapid* in stenosis.

Both have projectile vomiting, though it *may be more intense* in stenosis.

Both have visible waves of gastric peristalsis, though it *may be more marked* in stenosis.

Both show evidence of pain and discomfort when the stomach is full, and relief after vomiting, though it *may be less marked* in stenosis.

Both show gastric dilatation and retention with or without the X-ray, though it *may be more marked* in stenosis.

As I see it then, the diagnosis usually rests on two factors, both of which, I feel, prove pretty conclusively that we are dealing with a case of congenital hypertrophic stenosis of the pylorus.

Congenital, as the constant mass and no normal stools means something blocking the way since birth.

Hypertrophic, because we could not feel the pylorus unless it was hypertrophied, and it is revealed at operation or autopsy.

Stenosis, because no amount of hypertrophy would give rise to no normal stools without a blocking of the pyloric orifice.

Of the pylorus, because there is no other gastro-intestinal structure located to the right, just above the umbilicus, except the pylorus that could be felt and give rise to a blocking of the lower end of the stomach.

I emphatically do not believe in the modern tendency to speak of a mild stenosis or a severe stenosis of the pylorus of congenital origin. I can easily conceive of a variation in degree of a spasm, but for all practical purpose a congenital hypertrophic stenosis is *never mild*. If the pylorus is stenosed by an hypertrophy, it is not a question of degree, but an actual fact.

When writing a paper or listening to one, it seems to be absurdly simple to fit it into our practice, but when we try to do it, it is not so easy as it seems. The question of the normalcy of an infant's stools may not be an easy one and the question of palpating a mass may be very hard. Therefore, I am not advising or intimating that we should not use all medical means at hand to help us to diagnose each and every case and to use all of our knowledge of foods and medicine to keep up the baby's nutrition, but I do plead for a *definite diagnosis*.

It is rather disconcerting to read of physicians who get wonderful results in what is called pyloric stenosis, without operation, but which is never proved to be a true case of congenital stenosis of the pylorus. Simply the fact of curing the case without operation bespeaks to my mind that the correct diagnosis was pyloric spasm.

When we get some reports of medical means, whatever they may be, that cure an infant with the classical symptoms, and the author states that before treatment there were no normal stools and a constant mass was palpated, then we shall drop from our minds and cease to worry about congenital hypertrophic stenosis of the pylorus. Until then, a correct diagnosis means surgical relief, early and skillful, with the prospect of a speedy recovery.

Report of Case

Baby Whitehead, white male, born July 15, 1930, was seen by me in my office August 8, 1930. There was a history of continued vomiting, projectile in character, loss of weight and constipation. On examination, waves of gastric peristalsis were noted, no mass palpated, and a tentative diagnosis of pyloric spasm was made. Atropine solution, one to one thousand, was given before feeding and a thick cereal recommended.

The baby was about the same on its next visit and, having just read the paper by Dr. E. J. Barnett, recommending the use of phenobarbital, this was given in addition to the atropine and cereal. On the next visit the baby was no better and so it was hospitalized, and given intraperitoneal saline and surgical consultation was held with Dr. J. B. Jones and Dr. H. C. Jones. There was no mass palpated on entrance to the hospital, but the next day there was a questionable mass felt and, although there was some question as to its character, all agreed that there was a small mass near the lower border of the ribs to the right of the umbilicus. Dr. H. C. Jones recommended immediate operation on August 21st, but Dr. J. B. Jones and I, being swayed I believe by the wonderful report as to phenobarbital, and the baby's condition being good, decided to try a little longer to avoid operation. The condition, however, did not improve and it was operated on August 25, 1930.

The laboratory report on August 27, 1930, was as follows: Red cells—1,750,000; Hemoglobin—30; Leucocytes—28,400; Coagulation Time—4½ Min.; Bleeding Time—5½ Min.

An interesting corollary of the case is just what effect the phenobarbital had on the blood picture, and the constant oozing after operation. This infant, six weeks old, had eight grains of phenobarbital in seven days, in doses of one-quarter grain every four hours; this is equivalent to ninety-six grains to an infant twelve months old or about twelve hundred grains to an adult in seven days, or one hundred and seventy-five grains a day.

The baby apparently showed no toxic effects, as fever, eruption, mental or kidney degeneration, though four and a half grains a day to an adult has been known to give such a toxic effect. I could find no mention of the effect of phenobarbital on the blood.

Discussion

Dr. J. Bolling Jones, Petersburg: Baby W.—Case No. 43-1577—entered hospital with cardinal symptoms and physical signs of congenital pyloric stenosis. This opinion concurred in by Drs. McIlwaine, H. C. Jones and myself.

Under Dr. McIlwaine's guidance the most recent medical treatment advocated was tried for a week, without changing the clinical and physical picture. Although there was no apparent loss in weight, and there were small bowel movements occasionally, it was deemed best to operate.

Operation: Rammstedt, August 25. Ether anesthesia.

Procedure: Inner edge, upper right rectus incision. The pylorus was found and consisted of a hard indurated lump bound close to right post-abdominal wall. It was released with considerable difficulty sufficiently to be brought conveniently into view. Rammstedt operation done in usual way. The mucous membrane bulged into the dissected muscle; in lower end, in duodenal surface a small nick was made in mucous membrane, which was readily closed with purse string suture of linen. There was no bleeding that seemed to require ligature. On account of the nick in duodenum, a very small rubber dam cigarette drain was inserted—to be removed in twenty-four hours. Abdomen closed in layers. Post-operative condition was excellent.

A few hours later, in my absence, considerable hemorrhage occurred. Drs. McIlwaine and H. C. Jones felt that the wound and operative field should be explored. This was kindly done by Dr. H. C. Jones. under novocaine anesthesia. The drain was removed, and the wound in abdomen reopened. There was marked oozing at various points in abdominal wall. Operative field seemed clean and free from hemorrhage. Little or no blood was seen in cavity. After securing the main small oozing points in abdominal wall by ligatures, it was again closed in layers, without drainage. Post-operative condition was fair.

The next day, August 26, the child was quite pale but otherwise in good condition, and, particularly because of the last operative findings, this was thought to be due probably to hemorrhage that had occurred before the abdomen was opened the second time.

Blood from the mother was injected into the soft tissues of the buttocks, and later given in the external jugular, and later into the anterior fontanelle. In giving it in the external jugular, it was necessary to cut down on the vessel. It was difficult here to control the oozing from the skin, although the clotting time of the baby's blood was reported as practically normal.

Death occurred on August 28—three days after operation—with the typical picture of hemorrhage.

Autopsy on baby Whitehead, August 28, 1930, showed:

Only abdomen explored. On opening cavity, small amount of fluid blood noted between coils of intestines.

Appearance of intestines and stomach normal. No intestinal contents and no evidence of peritonitis. Incision in pylorus sealed over with plastic lymph. No blood clots adherent to it or near it. Behind and below the pylorus and behind the mesentery of the ascending colon was a large amount of blood, particularly infiltrating the tissues of the mesocolon.

There was small clot in the pelvis. The entire posterior peritoneum along the spine was much dis-

colored. The adhesions that we separated at time of operation were at the upper end of this area.

The entire stomach, pylorus and two inches of the duodenum were removed. After removal, the opening in pylorus was found well open both from above downward and from below upward. Nothing was escaping through the duodenum where it was nicked at time of operation.

Beginning about the middle of the transverse colon and extending to the rectum, the large bowel was, in our judgment, markedly contracted. This section was removed.

Conclusion: (1) Fatal secondary hemorrhage, occurring from congenital adhesions, which were broken up in bringing forward the pylorus at the time of operation. (2) Partial stenosis of distal half transverse colon and entire descending colon.

Dr. J. Shelton Horsley, Richmond: I was very much interested in the paper and also in the report of Dr. Jones. It is a rather unusual case. It is by following out these things, such as Dr. Jones' reports, that we shall really know something.

Dr. Leonard Freeman, of Denver, in discussing congenital pyloric stenosis before the American Surgical Association, brought out a theory of its etiology which I had never heard before. He thinks it is an evolutionary flareback. For instance, chickens and fowls have a craw and gizzard. The gizzard is a grinding mass of unstriated muscle. He thinks this congenital pyloric stenosis is a flareback, an attempt to imitate the gizzard. He has some very good authority on his side. Dr. McIlwaine has some very interesting theories. Divine, of Australia, thinks it is due to some sympathetic disarrangement similar to that from which we get Hirschsprung's disease.

From the operative standpoint, the operation is comparatively simple if done without too much trauma. I think it is a good suggestion Dr. Stuart McGuire made, several years ago, about using as an anesthetic, a sugar rag and local anesthesia. The liver should be pulled up and the stomach left distended with gas. In that way there is protection from eventration of the small intestines, which sometimes results from sudden strain.

Dr. C. E. Conrad, Harrisonburg: Just one thing of interest relative to the question of the action of phenobarbital, on the nervous element in pyloric stenosis. Three months ago I had a case that was operated on the fourth day after birth. The patient showed definite tumor and projectile vomiting on her third day. The operation did not relieve the vomiting; the fibers were well separated, but the baby continued to vomit. It was placed on atropin and given fluid to hold it up, without any result on the vomiting. At the end of seven weeks it was put on one-eighth of a grain of phenobarbital every four hours. It ceased vomiting and has had no trouble since. Two weeks after starting on the phenobarbital it gained fourteen ounces and has been gaining ever since. I think two things play a part in congenital stenosis, the definite stenosis and the nervous system, and that is why we get results sometimes in one way and sometimes in another.

Dr. J. B. Stone, Richmond: Dr. McIlwaine has given us a very interesting review of the different ideas that prevail on hypertrophic pyloric stenosis in infants. The fact that opinions have changed so much indicates that even at the present time we are in the dark as regards the etiology of this condition. The only theory that gives any hope of treating it in a preventive way is that of a vitamin B deficiency.

If you consider that an abundance of vitamin B in the mother's diet is important for her own general health and also for the health of her baby, it seems unnecessary to emphasize it as a special preventive for hypertrophic pyloric stenosis. The expectant mother should have a liberal amount of green vegetables in her diet, regardless of any possible effect in preventing pyloric stenosis in the infant.

As regards the question of stenosis or spasm, it has been said that if a child can be kept alive for six or eight months, it will recover spontaneously from hypertrophic stenosis, as well as pylorospasm. In my opinion it is doubtful whether a case of organic hypertrophic pyloric stenosis of marked degree can be kept alive on medical treatment for that length of time. Those that survive are probably severe cases of pylorospasm. From a practical standpoint, there are two things that we want to consider in these cases: first, the matter of making the diagnosis; second, what are we going to do after making the diagnosis? When it comes to making a diagnosis, I do not think we should hold off because of not being able to feel a mass. Personally, I do not think I have ever been able to feel a mass. Even in cases that come to autopsy we find masses we have never been able to palpate. When there is continued vomiting, constipation, and continued loss of weight without other explanation being evident, I think we are justified in making a tentative diagnosis of pyloric stenosis. If we get a child of that type (assuming that there have been no dietary errors), and put it on atropine for two weeks and thick cereal feedings along with other appropriate medical measures without improvement, I don't think we are justified in waiting any longer, but should operate. If we wait too long the child gets in such a feeble condition that it cannot stand the operation. Medical treatment in these cases is long drawn out and the child stands a good chance of acquiring some intercurrent infection with a fatal outcome. Make the diagnosis, then try medical treatment for a week or ten days; but resort to surgery early if there is no improvement on medical treatment.

Dr. McIlwaine, closing the discussion: I was hoping there would be a chemist in the audience, or a professor of pharmacology in one of the universities, who would discuss the effect of phenobarbital on the blood. It is interesting that an infant a few months old could stand a dose of phenobarbital comparatively as if you or I took a dose of 175 grains a day for seven days. I am still uncertain whether the Pheno Barbital caused the constant oozing or not.

FAMILIAL DYSTROPHY OF NAILS AND HAIR WITH REPORT OF THREE CASES.*

By KINLOCH NELSON, M. D., Richmond, Va.
McGuire Clinic, St. Luke's Hospital.

From time to time there have occurred in the literature reports of peculiar changes in the nails and hair apparently of a familial nature. Opportunity has presented itself for the observation of three such cases, two sisters and a brother over a period of several years. Also

*Read at the sixty-first annual meeting of the Medical Society of Virginia, held in Norfolk, Va., October 21-23, 1930.

one unaffected brother has been studied for other reasons, and in fact none came because of the anomaly herein discussed.

Report of Cases

Case I.

History: A. K., 53 years old, single, white, female, dressmaker, came to McGuire Clinic, September 17, 1927, complaining of vague abdominal pains which had troubled her for some time.

Family History: See below.

Menstrual: Periods began at 14. At first an occasional one was missed, later they came more frequently, usually every third week with scanty flow, for 3 or 4 days.

Menopause at 44, no trouble since.

Past History: Insignificant except that hair and nails had always been as below and she was subject to a vague general attack of sickness and nervousness in 1908 described as a nervous breakdown.

Physical Examination: Positive findings only.

3. Both finger and toenails showed absence of lunula. They appeared small and bitten off and did not reach the end of the finger. The distal end was slightly elevated from the nail bed which appeared normal. Vertical strictions seemed normal. They required very infrequent cutting and seemed dry and more brittle than usual.

4. Blood pressure 140/90.

Laboratory Examination:

Blood: Hemoglobin 72 per cent. Leucocytes 4,500. Differential count: Polymorphonuclears 50 per cent; lymphocytes 48 per cent eosinophils 2 per cent.

Wassermann negative.

Urine: Straw, slightly cloudy; specific gravity 1,016; acid; albumen faint trace(?). Sugar, acetone, and microscopic examination negative.

Course and Treatment: Placed on dilute hydrochloric acid and pepsin after meals. Got along very well. Returned in October, 1929, feeling well but troubled by hemorrhoids

Figs. 1, 2 and 3. Case I.

1. Hair over the head limited to a fine yellowish down. No eyebrows or eyelashes. Axillary and pubic hair absent.

2. Kidneys bilaterally palpable.

present for past few months. Given suppositories. At that time basal metabolic rate was minus 6. X-ray of sella turcica normal. Sugar tolerance test was done. (See below). At pres-

ent time is in good health pursuing usual duties.

Case II.

History: C. K., 51 years old, single, white, female, dressmaker, came to McGuire Clinic, June 29, 1928, complaining of pain in right lower abdomen and "indigestion" present for many years. Had recently been troubled by constipation and sensation of "bloating" over upper abdomen.

Family History: See below.

Menstrual: Periods began at about 15 years of age. Always regular. Stopped at 45 years.

Past History: Hair and nails have always been as below. (As a child had had an occasional stiff eyelash which seemed to "grow inwardly" and was pulled out by mother). Sore throat as a young girl. Urticaria at 31 years. Adenofibroma removed from both breasts at 37 years.

Physical Examination: Appearance of hair and nails so exactly like that of sister above that no further note need be made. The thyroid was slightly enlarged and hard. Blood pressure 170/96. Tonsils chronically inflamed.

Laboratory Examination:

Blood: Hemoglobin 80 per cent. White blood cells 5,300. Differential count: Polymorphonuclears 62 per cent; lymphocytes 33 per cent; eosinophils 5 per cent.

Wassermann negative.

Urine: Slightly cloudy, amber, acid; specific gravity 1,016; albumen faint trace(?); sugar and acetone negative. Microscopically, rare leukocyte and occasional hyaline casts.

Ewald Meal: Free hydrochloric acid 24; combined acid 18; total acid 42; benzidine blood test negative.

Course and Treatment: Placed on diet of foods low in acid and given magnesia and soda in small doses after meals. Tonsillectomy in September, 1928. Continued in good health except for occasional gastrointestinal upset. In December, 1928, Ewald meal showed free hydrochloric acid 50, combined acid 20, total 70. Benzidine test for blood negative. Urine normal. Patient returned in February, 1929. Right ovarian cyst removed. Got along very well. Returned for check-up in October, 1929. Basal metabolic rate minus 12. X-ray of sella turcica normal. Sugar tolerance test done. (See below.) For past year in good health pursuing usual duties.

Case III.

History: T. P. K., 42 years old, single, white, male bookkeeper, came to McGuire Clinic, July 22, 1925, complaining of weakness, nervousness, and loss of weight. All present for about two years. Recently had had considerable abdominal pain and fullness.

Fig. 4.—Photograph of Case II as a child.

Family History: See below.

Past History: Usual childhood diseases; typhoid fever at 20 years; influenza at 40 years. Neisserian infection at 32 years. Epididymotomy the same year. Hair always scanty and nails as described below since birth. All his life has been cold and "seems more so as he grows older."

Physical Examination: 1. Thin, short, fine yellowish to brownish hair over head. (Patient states that he formerly had more than at present.) Sparse axillary, chest, and pubic hair of same type. Eyebrows consist of small amount of similar hair. Eyelashes are limited to a few bristles. Beard pale yellowish requiring shaving about every three days.

2. Right kidney palpable and freely movable.

3. The nails are identical with those of sisters described above.

4. Error in refraction, having worn eyeglasses from time to time for many years.

5. Blood pressure 110/80.

Laboratory Examination:

Blood: Hemoglobin 70. White blood count 6,600. Differential count: Polymorphonuclears 72. Lymphocytes 28. Wassermann negative.

Urine: Light amber, cloudy, alkaline. Specific gravity 1,022. Albumen very faint trace (?). Sugar and acetone 0. Microscopic examination: Occasional pus cell. No blood or casts.

Ewald Meal: Free hydrochloric acid 38; Combined acid 24; Total 62. Occult blood very faint trace. Microscopic examination negative.

Basal metabolic rate minus 19.

X-ray examination: Exaggerated gastroptosis and ptosis of transverse colon. There is no other evidence of organic deformity or obstructive lesion in the gastro-intestinal tract.

Course and Treatment: Placed on thyroid extract gr. 5, daily. Also compound resorcin tablets 3, t. i. d., p. c. Given abdominal support. Considerable improvement. Basal metabolic rate plus 10, after several weeks. No change noted in hair or nails.

June 22, 1928. Observations had been continued from time to time since above. General condition essentially good with periods of digestive upset occasionally. At time of a severe upper respiratory infection, sputum was negative for tubercle bacilli.

At present time in good health pursuing usual duties.

Case IV.

History: Rev. M. F. K., 40 years old, married, white, Lutheran minister, came to McGuire Clinic, October 4, 1928, complaining of dull pain in region of umbilicus, constipation, pain in back of neck, headache, all present at times for many years. Also troubled by migrainous headaches prone to occur unless bowels move daily.

Figs. 5, 6 and 7. Case II.

Family History: See below.

Marital History: Married thirteen years. Four children living and well. One child has *spina bifida.* Otherwise negative.

Past History: Usual childhood diseases, un-

complicated. Severe case of "peritonitis" at age of 16. *Abdominal paracentesis* done several times. Tonsillectomy at age of 38.

Physical Examination: Essentially negative. Blood pressure 110/80. Hair and nails normal.

Laboratory Examination:

Blood: Hemoglobin 80. White blood cells 6,000. Differential blood count: Polymorphonuclears 71 per cent; lymphocytes 25 per cent; eosinophils 4 per cent.

Wassermann negative.

Blood sugar 155. Non-protein nitrogen 34.

Urine: Amber, clear, specific gravity 1,009, acid, albumen very faint trace (?), sugar and acetone negative. Microscopically, occasional leukocyte, no blood or casts.

Ewald Meal: Free hydrochloric acid 40; combined acid 32; total acid 72. Benzidine test negative.

Electrocardiogram: Sinus bradycardia, rate 60. Otherwise normal.

Course and Treatment: Placed on diet low in acid, given belladonna and bromide before meals, with magnesia and soda after meals. General health now o. k.

Discussion of Cases

All four were of under-nourished, underdeveloped appearance. All were mentally sound. None showed any particular skin disturbance. The family history as to disturbance of nails and hair is seen from the chart. The father of the four patients observed had abundant apparently normal hair until at college it came out and did not return. His nails were deformed (see photograph, Figure 9). Grandfather and great grandfather had normal hair but abnormal nails. One sister of patients observed has some nervous disease diagnosed multiple sclerosis.

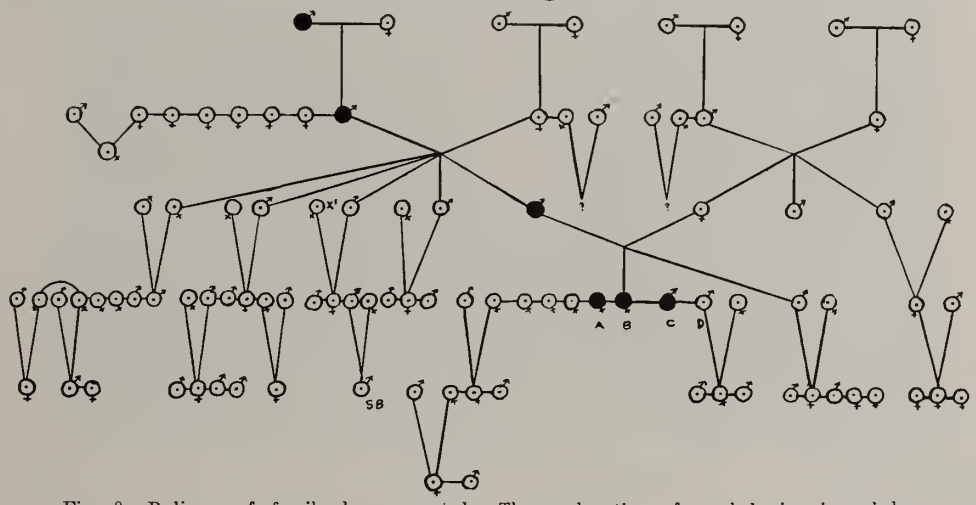

Fig. 8.—Pedigree of family here reported. The explanation of symbols is given below

Symbols.

♂ Normal Male

♀ " Female

♂ Affected Male

♀ " Female

A B C D Four Cases Studied

SB Still-Birth

? or X -. No Information

Renal Function: 61 per cent of dye excreted in two hours.

Feces: No parasites or ova. Occult blood negative.

General Consideration of this Disturbance

In considering the cause of any pathological process various groups of factors present themselves:

1. The influence of heredity, race, nationality, sex, age, environment (climate, occupation, etc.).

That this disturbance has an hereditary basis is immediately apparent upon perusal of the literature. Families similarly affected have been described by Nicolle and Halipré,[1] White,[2] Eisenstaedt,[3] Barrett,[4]* Tobias,[6] Jacobsen,[7] Mayer,[8] Thompson,[9] and Hoffmann.[13]†

*Chart not reproduced.
†Only a summary available.

(See charts.) Families suffering from a slightly different peculiarity of the nails accompanied by various abnormalities of hair, teeth, or other organs have been described by Fox[10], Wilson,[11] and Murray[12]. (See charts.) Families suffering from similar disturbances of the hair with normal nails have been described by Jeanselme and Rimé,[5] and Bazant and Gawalowski.[14]‡

From these charts it may be seen that the vast majority of affected persons whether men or women inherit the condition from an affected father or mother, sex apparently playing no part. In other words normal parents may expect normal children. To these statements there exist two possible exceptions: the cases of White,[2] where one whole generation was unaffected with recurrence in the next and succeeding generations; and those of Thompson[9] where the condition recurred in one instance where the parents and grandparents had been unaffected. The former author states: "All these data were gleaned after much ques-

‡Quoted by Jacobsen.[7] The original article not available.

Fig. 9.—Photograph of the father of the patients studied, showing abnormal nails and normal hair which afterward came out and did not return. (Note hypertrophic appearance of right thumb nail.)
Fig. 10.—Photograph of the grandfather of the patients studied, normal hair and abnormal nails.

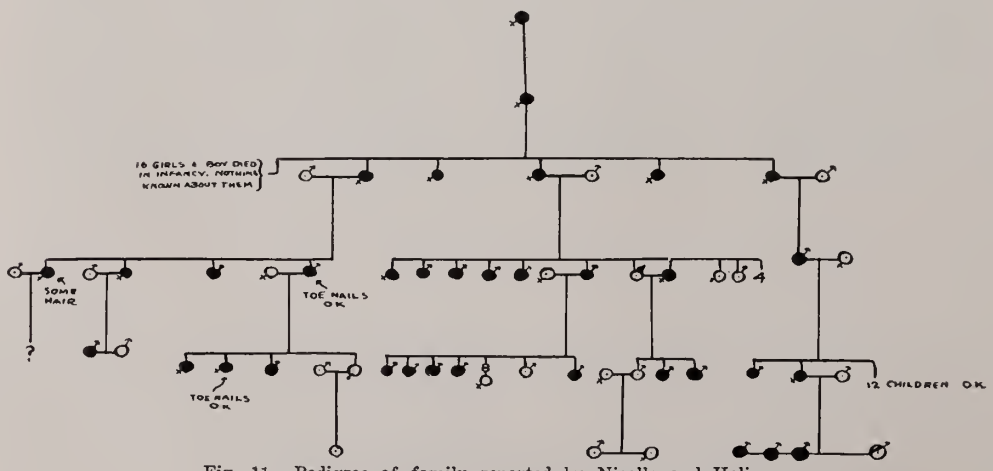

Fig. 11.—Pedigree of family reported by Nicolle and Halipre.

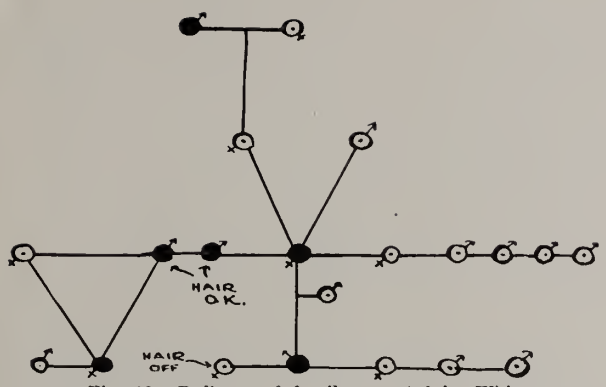

Fig. 12.—Pedigree of family reported by White.

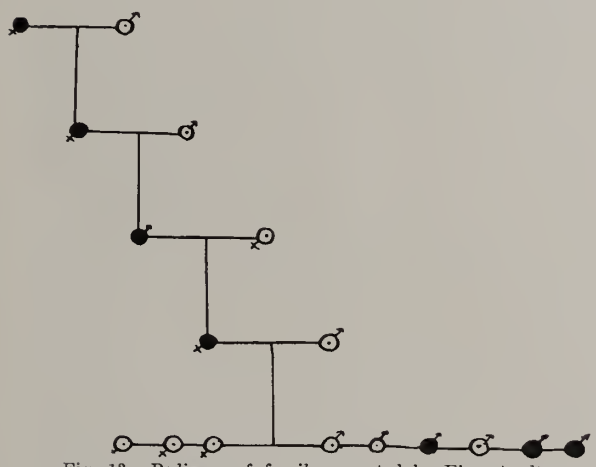

Fig. 13.—Pedigree of family reported by Eisenstaedt.

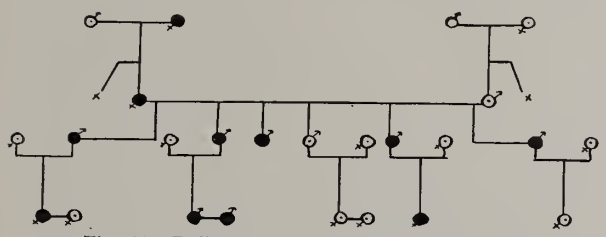

Fig. 14.—Pedigree of family reported by Tobias.

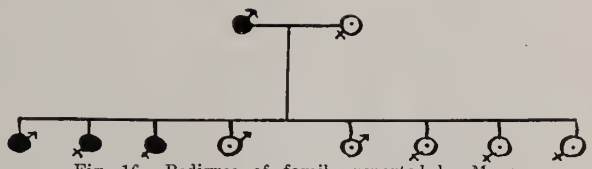

Fig. 16.—Pedigree of family reported by Mayer.

tioning, and I cannot vouch for their accuracy." With these possible exceptions the abnormality acts as a "Mendelian dominant unsex-linked."[7]

It is also seen that the majority of affected individuals have more normal than abnormal children. Again, many of the abnormal persons die without issue whether from social unattractiveness because of their deformity, or from lack of normal sexuality, or from some unknown cause. This is especially well illustrated by the family observed, in which the three affected members living are single.

Nationality and race would seem to have an important bearing here. All reported cases are in white persons. Whenever the origin of the affected family is mentioned (1, 2, 3, 4, 5, 7, 8) it is seen to be French, French Canadian, or Franco-German. No information is available as to the nationality of the other cases (6, 9, 10, 11, 12, 13, 14). The family herein presented originally emigrated from Alsace, now a province of France.

Age, climate, occupation, etc., do not seem involved in this dystrophy except that in practically all cases the abnormality is congenital. In Fox's case[10] the trouble was first noted at the age of four, in White's[2] at the age of nine.

2. The influence of foreign agents, such as chemicals, physical forces, bacteria, fungi, etc.

Neither in the reported cases nor in those observed did any chemical or physical agent seem to play a causative rôle. Several authors

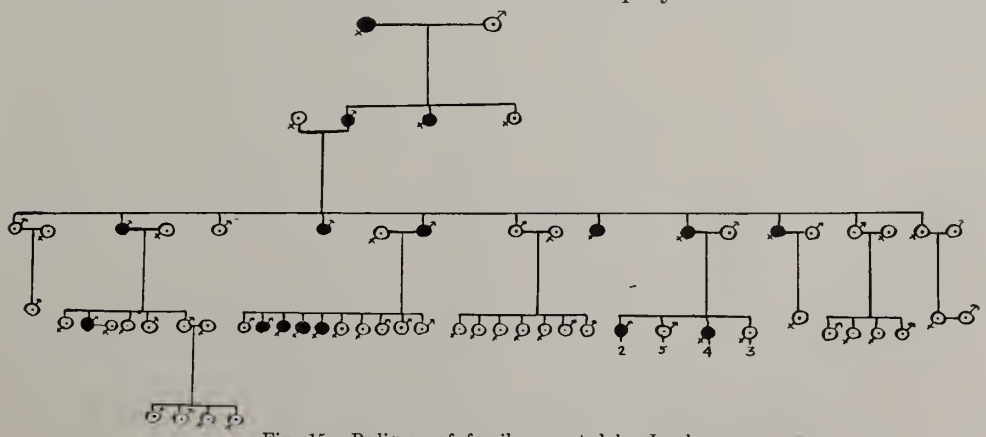

Fig. 15.—Pedigree of family reported by Jacobsen.

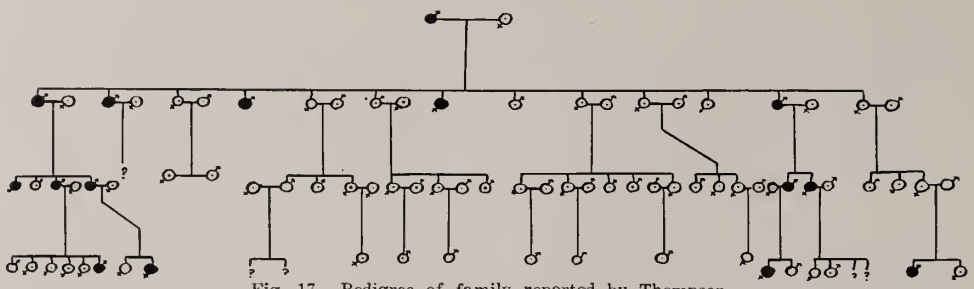

Fig. 17.—Pedigree of family reported by Thompson.

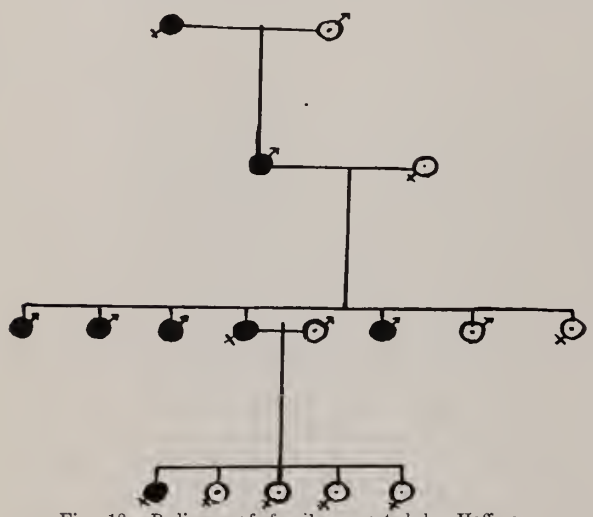

Fig. 18.—Pedigree of family reported by Hoffman.

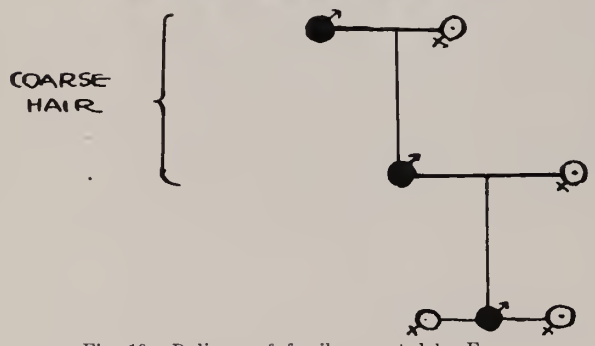

Fig. 19.—Pedigree of family reported by Fox.

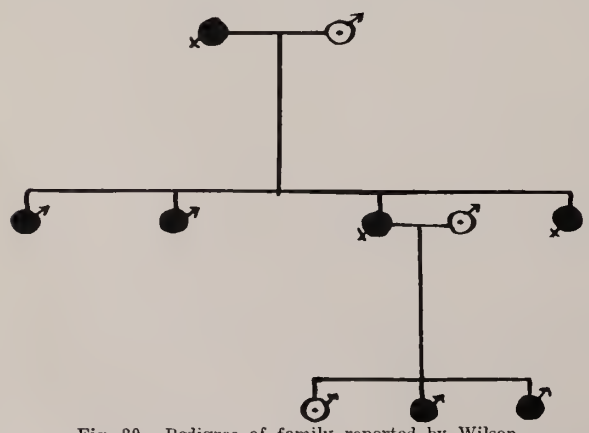

Fig. 20.—Pedigree of family reported by Wilson.

attempted the cultivation of bacteria or fungi from the affected hair or nails. White[2] was unable to find either by examination, direct staining, or culture any parasites in the hair. From the nails he cultivated staphylococcus pyogenes albus and streptococcus pyogenes albus.* Wilson[11] found no spores on the nails. Tobias,[6] Jacobsen,[7] and Eisenstaedt[3] found no evidence of mycotic infection. Our cases were not so studied.

3. The influence of disease in other organs whereby the pathology under consideration becomes an evidence of some more basic disturbance instead of being the actual primary trouble.

All reports have excluded congenital syphilis, nor has any skin disease such as icthyosis, psoriasis, etc., seemed to play a causative part.

Efforts have been made to link the disturbance with some dysfunction of the internal glands, especially the thyroid. Nicolle and Halipré[1] were unable to palpate the thyroid in their case. They state that it is either absent or atrophied. In Hoffmann's[13] family many members had had enlarged thyroids. The patient studied by him showed an enlarged thyroid, other findings making him suspect a slight hyperthyroidism. The patient was 27 years old at the time. No metabolism reading was stated. Two patients of the family observed by Barrett[4] showed an apparent myxedema. Another, aged 27 years, suggested hypothyroidism. No metabolism recorded. This patient improved in general condition and also as to nails and hair following thyroid administration, returning to previous condition when this was stopped. He concluded: "The well-known association of abnormalities of hair and nails in hypothyroidism and the two fairly well-defined cases of juvenile myxedema, and the reaction of one case to thyroid

*Several of the nails in his patients were infected. Whether cultures were taken from these or from the uninfected ones is not stated.

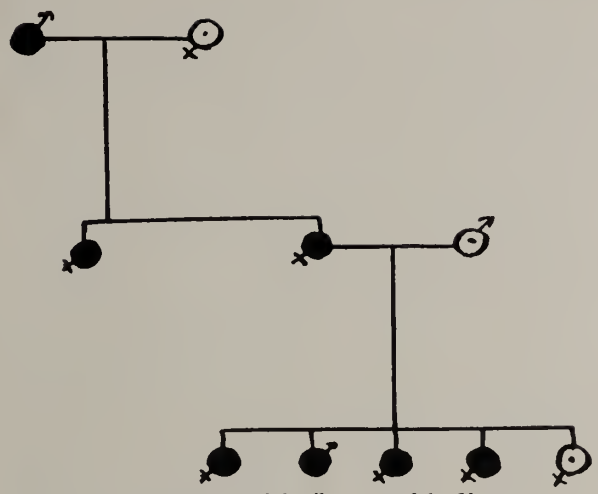

Fig. 21.—Pedigree of family reported by Murray.

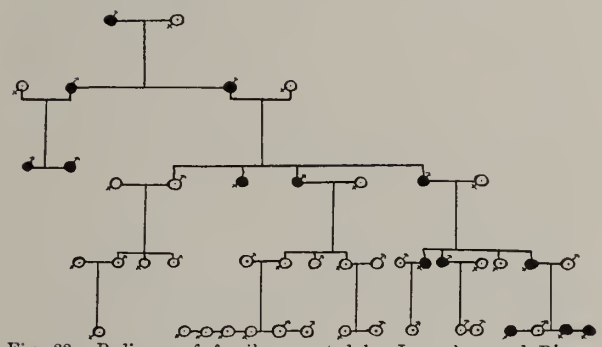

Fig. 22.—Pedigree of family reported by Jeanselme and Rime.

feeding, seems to warrant the conclusion that the fundamental disorder in this family was of the thyroid gland." Jeanselme and Rimé[5] noted no gross evidence of thyroid or ovarian deficiency. Jacobsen[7] found a somewhat elevated metabolic reading in one of his cases. He considered this of doubtful value. Mayer's[8] case, aged 20 years, suggested no particular hyper- or hypo-thyroidism. He records the thyroid as small, the metabolism as minus 9. In the author's cases there was no clinical impression of thyroid dysfunction. In two cases the metabolic readings were minus 6 and minus 12. No thyroid medication was given. In Case III the metabolism was minus 19. Thyroid extract gave general improvement but produced no appreciable change in hair and nails.

Later observers have investigated as far as possible the condition of other internal glands. The cases of Barrett,[4] Mayer[8] and the author have shown normal sellae turcicae. Barrett[4] also states: "This patient was tested for glucose tolerance and it was found that he could take 250 gm. of glucose in twenty-four hours before sugar appeared in the urine." Exactly what this signifies is not clear but apparently it is taken to indicate that the patient's ability to tolerate sugar was elevated or that his "renal threshold" for sugar was elevated. The so-called sugar tolerance test was carried out on two of our patients as follows: 1.75 gm. of glucose per kilo of body weight were administered by mouth. Blood sugar determination was made prior to this, one-half an hour and two hours afterward. The urine was examined for sugar at intervals during the test. In Case I, the fasting blood sugar was 110. One-half an hour after glucose administration it was 165, and two hours after it was 145. In Case II, fasting blood sugar was 110; one-half an hour after glucose it was 210, and two hours after it was 200. No sugar was spilled into the urine during either test. These observations would indicate a poor tolerance and an elevated renal threshold. Such changes are most frequently seen in persons frankly diabetic or potentially so. No other facts lead to such a suspicion here. Cases said to have hyperpituitarism, as well as other disturbances, may show curves similar to these. Certainly, however, no one would make any definite diagnosis on this basis alone.

In the investigation of the other internal glands, such as the pancreas, ovary, testicle, etc., either observations have been negative or no methods for testing their function have been devised up to this time.

II. Pathology

This may be roughly divided into several groups, as follows:

Group I. Cases showing nails of hypertrophic appearance, especially at the ends, and the hair either normal or involved (10, 11, 12).

Group II. Cases showing nails of somewhat atrophic appearance, and the hair most frequently abnormal (1, 2, 3).

Group III. Cases with involvement of the hair, and normal nails (5, 14).

Of the reported cases many combinations of the above types occur in the same family groups. Some have hypertrophic nails with coarse abundant hair; others atrophic nails of fingers with nails of toes normal and hair abnormal; others somewhat hypertrophic nails and abnormal hair; etc. No reported or ob-

served case has shown involvement of toe nails alone, or involvement of toe nails and hair.

1. Nails.

A. Gross Pathology

Group I. The base of the nail has a smooth surface with normal appearance. As the distal end is approached there appears marked hypertrophy, apparently of nail-bed, resulting in a yellowish, blackish, or brownish mass between the nail and finger. The end of the nail may project upward and be curled with a claw-like appearance.

Group II. The base of the nail may be normal or the lunula may be absent. The nail appears smaller than normal and frequently the end of the finger or toe has a rounded bulbous appearance. The nails are usually attached to the bed throughout their extent, but in some cases the distal end of the nail projects slightly. The nail itself seems dryer and more brittle than normal. They appear as if constantly bitten.

Many cases show nails having some characteristics of each group.

Group III. Nails normal. Hair abnormal.

B. Microscopic Pathology

No examinations of nail sections have been made. X-ray of the fingers in one case[8] revealed no disturbance.

2. Hair.

A. Gross Pathology

Except in one instance,[10] all deviations from normal in the hair have been as follows: Normal distribution of hair is usually absent especially in women, that on the head being short, soft, pale yellowish, or yellowish brown, and pointed on the end. It is easily pulled out without any particular discomfort on the part of the patient. Some cases have shown hair as much as 30 cm. long. Eyebrows and eyelashes are usually absent or are limited to a few short bristles. The beard of the men is very frequently absent or sparse, individual hairs being similar to those on the head. Axillary and pubic hair is either absent or sparse, and may be of feminine type in the men. The chest or other portions of the body may show the fine down above described.

B. Microscopic Pathology

Under the microscope these hairs appear normal. There are no air bubbles, rings, nodes, or splits (5, 2).

Associated with the disturbance of the hair and nails or both, there have been recorded various other disorders such as hyperkeratosis of the skin, cutis marmorata, mental disturbances such as hysteria, idiocy, criminal delinquency, speech defects, and abnormalities of the eyes. As has been remarked by others, it seems noteworthy that all structures usually, or occasionally, clearly involved arise from the ectoderm.

III. Clinical Picture and Diagnosis

The history, physical findings, other examinations, and diagnosis are exemplified by the above discussion.

IV. Treatment

This has been universally poor in results. The shaving down of the hyperkeratotic mass plus the use of some ointment such as that of salicylic acid have given some temporary relief but afforded no benefit to the condition itself. The administration of thyroid extract has apparently proven beneficial in one case,[4] and has been recommended by Jacobsen.[7] In our Case III, thyroid extract, though elevating the basal metabolic rate, produced no change in the nails or hair. In Thompson's case,[9] X-ray treatments showed some temporarily beneficial results. Apparently, no efforts have been made to produce a better growth of hair except in Barrett's case[4] where thyroid extract seemed to have been helpful.

V. Prognosis and Course

Many authors have recorded the liability of these nails to infection, especially following slight trauma. Such infections give off a peculiarly offensive odor.[1, 2] When infection is once present it is gotten rid of with great difficulty and tends to return from time to time. It has also been noted that these nails come off easily, which occurrence is followed by the slow growth of a new one similar to the original. In no recorded case have normal nails replaced those originally abnormal.

Summary and Conclusions

1. Familial dystrophy of the hair and nails is an hereditary disturbance directly transmitted from parent to child, occurring primarily in persons of French origin. *Unaffected individuals seldom if ever transmit the abnormality to their descendants.* It is characterized by changes, usually congenital, in the nails of hands and feet, a peculiar type of hair,

and at times by various other disturbances, especially in structures derived from the ectoderm. There is a possibility that some internal gland dysfunction, notably that of the thyroid, may be associated with this disease. Persons so affected may have involvement of the finger nails alone; finger nails and toe nails; hair alone; finger nails and hair; or finger nails, toe nails and hair. No case has been noted of the involvement of the toe nails alone, or toe nails and hair. No treatment has proven of any particular benefit. Such nails are very liable to sluggish recurrent infections.

2. Three cases with their family history have been added to the literature on this subject.

BIBLIOGRAPHY

1. Nicolle, G., and Halipré, A.: Haladie familiale characterisée par des altérations des cheveux et des ongles, *Ann. de dermat. et syph.*, 6:675 and 804, 1895.
2. White, C. J.: Dystrophia Unguium et Pilorum Hereditaria, *J. Cutan. & Gen. Urin. Dis.*, 14:220 (June), 1896.
3. Eisenstaedt, J. S.: Three Cases of Familial Dystrophies of Hair and Nails, *J. A. M. A.*. 60:27 (January 4), 1913.
4. Barrett, A. M.: Hereditary Occurrence of Hypothyroidism with Dystrophies of the Nails and Hair, *Arch. Neurol. & Psychiat.*, 2:628 (December), 1919.
5. Jeanselme and Rimé: Un cas d'alopécie congénitale familiale, *Bull. Soc. franc. de dermat. et syph.*, 31:79-82, 1924.
6. Tobias, Norman: Hereditary Familial Dystrophy of Nails, *J. A. M. A.*, 84:1568 (May 23), 1925.
7. Jacobsen, A. W.: Hereditary Dystrophy of the Hair and Nails, *J. A. M. A.*, 90:686 (March 3), 1928.
8. Mayer, W. D.: Congenital Dystrophy of the Hair and Nails, *J. Mich. S. Med. Soc.*, 27:712, (November), 1928.
9. Thompson, T. C.: Hereditary Dystrophy of the Nails, *J. A. M. A.*, 91; 1547 (November 17), 1928.
10. Fox, T. C.: Symmetrical Hyperkeratosis of the Nail-beds of Hands and Feet and of Other Areas, Chiefly in the Palms and Soles, *Clin. Soc. Trans.*, 30:242 (April 23), 1897.
11. Wilson, A. G.: Three Cases of Hereditary Hyperkeratosis of the Nail-Bed, *Brit. J. of Dermat.* 17:13 (January), 1905.
12. Murray, F. A.: Congenital Anomalies of the Nails. Four Cases of Hereditary Hypertrophy of the Nail-Bed Associated with a History of Erupted Teeth at Birth, *Brit. J. of Dermat*, 33:409, 1921.
13. Hoffman, R.: Uber Verkummerung der Augenbrauen und der Nagel bei Thyreoidosen, *Archiv. fur Dermatology and Syphilis*, Wien, 89:381-384, 1908.
14. Bazant and Gawalowski: Hypotrichosis Universalis Congenita, *Ceska Dermatologie* 1: No. 7, 1920.
15. Pires de Lima, J. A.: Onychatrophie familiale congénital, *Ann. de dermat. et syph.*, 6:266-271, 1924. Quoted by Jacobsen. Reference not available.

AN UNAPPRECIATED SOURCE OF EPIGASTRIC DISTRESS.*

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It is with some hesitation and a misgiving amounting almost to fear that I shall ask your consideration of an unappreciated source of epigastric distress, for I fully appreciate the utter folly of attempting to present a communication entirely new upon any one of the various rôles of the gastro-intestinal tract. Yet the ailment, to which I refer, is a common one. What I shall say is based entirely upon my own observation and my own experience and more particularly upon the last one thousand examinations that I have made of the stomach and intestines. To those gentlemen, who have so kindly taken me into their confidence during so many years and who have kept (and are keeping) me supplied with an abundance of material, I tender my most profound appreciation.

As a boy (and especially as a student of Professor Gildersleeve's excellent Latin primer) I was kept well informed of the fable or parable of the belly and the members. Once upon a time, so the story goes, the various members of the body, observing that the belly did no work but apparently lived a life most idle and luxurious, determined to revolt. Accordingly, the hands refused to convey the food to the mouth, the mouth to receive it, the teeth to chew it and the gullet to swallow it. They soon learned, however, to their sorrow, that they became weaker and that it is only by the harmonious functioning of the digestive organs that we live and thrive.

As a college student I found that a belated breakfast, a hearty dinner and a supper usually consisting of hot bread, hot meat and griddle cakes, unless accompanied by a reasonable amount of exercise in the open air, were not compatible with an optimum condition of the brain for the acquirement of knowledge or "cramming" for tedious and strenuous examinations. As a medical student it was freely impressed upon me that the stomach was the seat of many of the common ills of mankind. Gastritis, hyperacidity, hypoacidity, ulcer, carcinoma, all of these were freely discussed, but of the duodenum, ileum and colon, these latter were only occasionally mentioned and then only in connection with certain ulcers of

*Read at the meeting of the Norfolk County Medical Society, February 16, 1931.

the small intestine and amoebic and other dysenteries.

When I began to practice medicine, to the appendix was ascribed most of the ills to which the stomach and intestines are heir. The pathology of the blind gut had been established and a suitable operative procedure developed. To quote the opinion of a friend, our venerable State medical society literally became a surgical debating club, the principal topic being when to operate and when not to operate in appendicitis. Obsessed with the idea that the gastric ills were more than common and of serious possibilities, I sought long and earnestly for what I could not find. My own conversion has, therefore, come somewhat like that of St. Paul, a long series of preparation, a succession of hard knocks and a dramatic dénouement. It is only lately that we have begun to see clearly and I think that all of us would gladly vote to delete from the works upon the principles and practice of medicine much that is said upon the subject of gastro-enterology and to consign some of the special works and papers upon that subject either to the flames or to the sea.

In any well conducted examination or study of any of our organs a well taken history is most essential. It tells us in no uncertain terms why the patient has consulted us. Yet this craze for history taking has its pitfalls. Some years ago, for instance, a distinguished internist, of Boston, made the statement that he could diagnose carcinoma of the stomach from the history and a physical examination long before the instruments of precision would reveal anything. And this state of mind still persists. To give just one example: Some years ago I was consulted in regard to a gentleman complaining of an abdominal pain. I diagnosed a pathological gall-bladder. The referring physician, however, thought well to have another consultant. A diagnosis was made of ulcer of the stomach. The patient entered one of our hospitals, was placed upon the diet of Lenhartz, improved and in due season was discharged. The original pain recurred. This time he consulted a surgeon. I was again asked to make an examination and, as before, reported my conviction that a pathological gall-bladder existed. A cholecystectomy was, accordingly, performed and the patient made an uneventful recovery. A little later I desired to report the case. An examination of the hospital record gave a most beautiful history tending to establish a diagnosis of gastric ulcer. The second history was indicative of a pathological gall-bladder. In other words, given a patient suffering from a digestive distress, we can by proper methods of questioning obtain any history that we desire.

This, however, is through no fault of the examiner. We have long since found that case histories are in many instances like the answers of the ancient oracles; they can be interpreted in more ways than one. If we will accept the law of the inverse arc, so much commented upon by Mackenzie in his work upon the diseases of the heart, that any pathology occurring along the course of a nerve will have its pain referred to the terminal distribution of that nerve, as true, the problem will become clearer. The vagus or pneumogastric nerve supplies branches to the stomach directly and to the other intestines indirectly through the solar and mesenteric plexuses; its terminal fibres are in the pyloric end of the stomach. Then, too, the stomach, duodenum, gall-bladder and ascending colon occupy an almost common area. So that an injury to, or pathology of, any of these organs is likely to be referred to what is believed to be the area of the stomach, or more properly to its pyloric end.

We learn by our failures. Of the personal application of the law of the inverse arc I have lately had a very instructive example. Several months ago I was consulted by an old playmate, a charming lady. She complained of pain over her lower left chest. Pleurisy could be definitely ruled out, as could also gastric or gall-bladder disease. The shadow of her heart and arch was apparently normal. Yet the pain continued. An examination of certain teeth was apparently negative. She was seen by many consultants. The possibility of Malta fever was considered. Finally an enlargement of the area of the arch of the aorta was found by another roentgenologist. A diagnosis of spinal cord tumor seemed warranted. A terminal pneumonia then ensued. A post-mortem revealed the presence of a malignancy involving all of the nerves of the dorsal region as they emerged from the spinal column, though the spinal cord itself was negative. If, therefore, the law of the inverse arc holds

in the case of the thorax, it is no less true of the abdominal cavity.

From this consideration of the history let us turn our attention to the physical examination of the abdomen. In my own experience (and I think that you will all agree with me) only the grossest pathology of the digestive tract can be discovered. A tumor of the stomach, pancreas, or spleen, an invagination of the bowel, an increase in the size of the liver to palpation or percussion and the location of tender points are perhaps all of the information usually obtainable. Yet this examination is most essential. Occasionally, something unsuspected is brought to light. Lyon in his admirable work on the non-surgical drainage of the biliary tract strongly advises that a diagnosis should be made by physical means, if possible, before resorting to roentgenological methods. He would then either confirm or disprove his tentative diagnosis,—a display of diagnostic ability, perhaps, but in the opinion of most of us a useless expenditure of time and patience.

And so certain other methods have been evolved. We used to be taught that the presence of vomited blood was indicative of some lesion of the stomach, bright blood in the case of an ulcer, "coffee grounds" in the case of a carcinoma. We began to use the stomach tube, to recover gastric contents after a test meal, to test for occult blood, etc. As worked out by certain of the authorities, this method of diagnosis seemed real and convincing. A hyperacidity accompanying occult blood was indicative of ulcer, one of hypoacidity together with occult blood suggestive of carcinoma. But let us hear what Smithies has to say. In an address before our State medical society in 1922, he* says: "The gastric test meal furnishes no pathognomonic information. We must get out of our heads and text-books the idea that increase in gastric acidity means ulcer and that decrease in gastric acidity means that ulcer is healed or absent. There are too many variations in the normal degree and rate of secretion of gastric juice ever to permit the statement that in any individual the finding of high HCl values is due to or indicative of ulcer. Our records show that approximately 30 per cent of proved ulcer cases were associated with what might be termed increase in hydrochloric acid values; that the majority of patients had acid within the so-called normal range, while 25 per cent had no free HCl or the acid secretion was very low; yet with all these variations in acidity, in the great group of patients there was no associated variation in clinical symptomatology or in the rate of ulcer progression or of healing." With this statement of Smithies I feel that most of the better gastro-enterologists are in full accord. Yet no one would discourage the use of the test meal, for any bit of information, however obtained, is of value.

Of the question of occult blood or hemorrhage, it has been my own experience that the great majority of hemorrhages from the gastro-intestinal tract, about which I have been consulted, were due neither to a frank ulcer or to a carcinoma. An inflammatory condition of the oesophagus will often cause it. I have seen cases in which there was frank bleeding, yet my own examinations were negative. In one the recurrence of the bleeding suggested an exploration. Only an exceedingly minute bleeding point was found. A gastro-eterostomy was, accordingly, done, only to have to be undone some weeks later. In another case the surgeon thought best to resect a small ring of the pylorus, but it took the most exacting microscopic examination to determine the bleeding point. In another case repeated transfusions of blood were made upon a case diagnosed as gastric carcinoma. Yet the autopsy showed no bleeding point or carcinoma of the stomach (my own opinion was negative) but a case of splenic anaemia. Similarly, I have found pathological gall-bladders, whose removal relieved the source of bleeding.

My work upon the gastro-intestinal tract with the roentgen rays has probably shown a higher percentage of correct diagnoses than that of the average roentgenologist. I have been particularly struck with the absence of ulcer as a cause of epigastric distress. In a series of perhaps one hundred and seventy-five consecutive cases observed at the Mayo Clinic in 1918 through the courtesy of the late Dr. Carman, only two were suspicions of ulcer of the stomach. At a visit to the Clinic in 1928 as the guest of Dr. Alexander Moore, who at that time was in charge of the department of roentgenology dealing with gastro-enterology, I was impressed with the small number of gastric ulcers presenting themselves. In a discussion with Dr. Moore I was informed that

*American Journal of the Medical Sciences, December, 1923.

the percentage of gastric ulcers found in the routine examination of the patients was about 1 or 1½ per cent, that the number of gastric carcinomas was somewhat larger, and ulcers of the duodenum approximated 5 per cent. I freely confess that I have had my proportion of failures, of ulcers of the duodenum presenting a normal "cap" upon the roentgen plate, etc. But it must be said that an occasional failure presents no grounds for adverse criticism and that the roentgen examination of the gastro-intestinal tract in competent hands offers the best method of examination that we now possess. Let me repeat the phrase, "in competent hands," for even as Sir Joshua Reynolds was wont to mix his paints with brains, brains must be added to the mixture of buttermilk and barium, which we administer to our patients.

A renaissance of interest in the gall-bladder followed the dying interest in the appendix. To the gall-bladder was now assigned most of our digestive ills. The operation of cholecystectomy very properly displaced the old operation for gall-bladder drainage. The proportion of recoveries was greatly increased. About this time an added interest was given to the study of gall-bladder pathology by the announcement of George that any gall-bladder, which was visualized upon the roentgen plate, or could be visualized upon the roentgen plate, was a pathological gall-bladder. Then, too, the excellent studies of many of our greatest pathologists added zest to the work. In a series of perhaps two hundred consecutive examinations of the gall-bladder by myself and operated upon by Dr. Robert L. Payne, almost without exception the examining pathologist rendered a report that the organ was definitely pathological. I say "organ" advisedly, because in the light of the newer physiology the gall-bladder is regarded as an organ with the definite function of the concentration of the bile, of expulsion, and, perhaps, also of absorption.

It was about this time that Lyon announced his non-surgical method of biliary drainage. This was based upon the assumption that the so-called sphincter of Oddi had a contrary innervation and that a solution of magnesium sulphate applied directly to the mucous membrane of the duodenum would cause an emptying of the gall-bladder. This discussion I have followed with the utmost interest. By some surgeons it was claimed that such was not the case, anatomists doubted the existence of a true sphincter at the ampulla of Vater, and still other medical men could see no essential difference between a dose of Epsom salts given by the mouth and one given by the duodenal tube. Into these various discussions it is not my intention to enter at this time. The aspiration of the duodenal contents undoubtedly seemed to confirm the theory of Lyon and undoubtedly was productive of the greatest good.

A little later we were thrilled by the announcement of Cole and Graham that by the administration of a "dye" of the phenolphthalein series we could visualize in no uncertain manner the gall-bladder upon the roentgen plate. Subsequently, we learned that the ingestion of food, particularly of fats and egg-yolk, would tend to empty the gall-bladder. If such were indeed the case, why would not a medical treatment of the infected gall-bladder (I do not, of course, refer to biliary calculi) be most rational. We could apply iodine to the interior of the organ through the ingestion of one of the iodine compounds of the phenolphthalein group, then, following this by food, we could cause an emptying and, finally, by giving a dose of magnesium sulphate, clear the intestine of the infected bile. For a long time I have held such an opinion. I have discussed this theory at the meetings of medical societies and I was even promised the assistance of a pharmaceutical house to try to determine just how much the gall-bladder could be sterilized.

Early in my work upon the gastro-intestinal tract I noticed that the administration of barium and buttermilk seemed to have a tendency to relieve various symptoms, which I had associated with a hyperacidity, perhaps due to some disturbance of the gall-bladder, or, reflexly, from a chronically diseased appendix, possibly also from some intestinal fermentation. I have had patients to call and request a prescription for some of the powder or mixture, which so signally relieved them. To the effect of the buttermilk I ascribed most of the relief, though I thought that perhaps the coating of the mucosa of the stomach by an inert substance relieved a hyperacidity even as the ingestion of sweet oil; yet the buttermilk seemed essentially to be the benefiting substance, more especially as Bulgarian sour milk had been so extensively advertised.

I also noticed in my work upon the gall-bladder before the advent of the "dye" test that there was often a series of indirect signs suggesting a pathology of the organ. Careful observation seemed to suggest that a peculiar marking of the ascending colon, as by gas, was as much an indirect sign of gall-bladder pathology, as an encroachment upon the bulbus duodeni or "cap." I was, moreover, struck with an occasional temporary relief after a cholecystectomy and I thought that this temporary relief was due to the rest in bed, the restricted diet and the careful regulation of the bowel. The administration of the "dye" seemed, as I have said above, to offer an excellent medical treatment to a diseased gall-bladder, but I little thought that the relief following the administration of the sodium tetraiodophenolphthalein was due almost as much as to its antiseptic action upon the intestinal contents.

Some years ago Mrs. C. was referred to me for an examination of the gall-bladder. The shadow of the organ was readily shown upon the roentgen plate. This shadow was accompanied by a ptosis of the kidney. A diagnosis of a pathological gall-bladder was, accordingly, made, and the patient operated upon. The gall-bladder showed pathology and was of a "strawberry" type. Some time later, however, the symptoms returned. A microscopical examination of the stool, I am told, showed the presence of the giardia. The use of one of the arsenicals completed the cure. Naturally, the question arises: Was the gall-bladder primarily diseased, or was the infection of the gall-bladder due secondarily to the presence of the giardia? I remember another case. Mr. O. complained of a pain just to the right of the epigastrium and more specifically in the right hypochondrium. Accordingly, the kidney was suspected. The roentgen examination showed a kidney normal in size and position and an absence of a calculus in the urinary tract. An examination of the gall-bladder then ensued. The response to the "dye" was normal. The gall-bladder apparently showed no pathology. The symptoms disappeared. The patient recovered. What was the pathology? Was it that the administration of a strong antiseptic had had some action upon an intestinal fermentation?

As from the stone age to the bronze age and in turn to the iron age the cultural history of the human race has progressed, so from a consideration of the appendix and the gall-bladder our attention is now directed to the colon as the seat, in part at least, of many of the ills of the digestive tract. This is my own belief and it is to a certain aspect of colonic disease that I would direct your attention. This I shall soon explain. If my preliminary discussion has been a prolonged one, the attempt has been made to show some of the gradual evolution in the story of epigastric pain. I am often consulted for an epigastric pain and after a negative examination of the stomach, the terminal ileum, the gall-bladder and perhaps the appendix, I have almost invariably found a certain amount of gas in the hepatic flexure of the colon. This may or may not be accompanied by a constipation or a diarrhoea. It is, however, almost invariably relieved by the administration of the meal of buttermilk and barium and often by the sodium tetraiodophenolphthalein. What is the essential pathology? Is it a true colitis? Is it a question of intestinal fermentation? This we shall briefly discuss.

If we will analyze the pain of a nephritic or biliary colic, we must conclude that almost invariably the pain is due to pressure. The same thing exists in the case of the ascending colon. It is this, to which I would call your attention. This is the source of epigastric discomfort, to which I have alluded. It is the pressure of air or gas upon the ascending colon, and more particularly upon the hepatic flexure, that sets up an irrigation of the nerve filaments making up the plexuses of Meissner or Auerbach. This irritation is transmitted along the course of the vagus and referred to its terminal filaments in the region of the epigastrium. Even as in the case of the "dying" pulp in the pulp-chamber of a tooth, we may have all the gradations of discomfort from a distress almost subconscious to an acute misery. Likewise, the relief of the tension, as by the expulsion of gas or air in the one case through the natural channels, or in the other case through the opening made by the dental surgeon, brings a prompt relief. Just what to call this I hardly know. To my mind it is a true colitis; it also resembles some form of a fermentation. Yet this fermentation produces an irritation. Perhaps, the term acute ascending colitis will serve as well as any other. Personally, I believe that this is a distinct

pathological entity. Rarely does the retention of air or gas at the splenic flexure or descending colon cause a reference of the pain to the epigastrium. It has been well said, indeed, that he who would master the art of internal medicine must master the problem of syphilis. May I add that he who would be master of the subject of gastro-enterology must be familiar with the manifold functions and distribution of the vagus?

The etiology of the acute ascending colitis, to which I have alluded, is not hard to find. It may be of an organic, functional or neurotic origin. You are all familiar with the anatomy of the normal colon. You are more or less familiar with the variations as found by roentgenological studies. I say "roentgenological studies," for this is a study of living pathology, albeit by transmitted light or shadows, but it differs widely from the pathology as found on the post-mortem table. I have observed malformations of the ascending colon due to a retro-caecal appendix. I have observed acute angulation of the hepatic flexure, ptosis of the caecum and ptosis of the transverse colon. In some cases, indeed, it would almost appear that Nature had overlooked the formation of a ligament between the hepatic flexure and the liver or other organ. Thus we frequently find a right sided ptosis. Given, therefore, any of these conditions, it is easy to see that a stasis of the contents of the ascending colon must result with a consequent fermentation.

Then, too, we must reckon with an intestinal fermentation *per se*. We must analyze the habits and occupation of the individual. In my own experience this is particularly likely to happen when a residence is not provided with a suitable toilet. The discomfort of arising upon an inclement night and retreating to an outhouse naturally suggests a repression of the act of defecation. Likewise, a postponement of defecation due to the pressure of business affairs, an unsavory retreat, as in the case of so many of our railway coaches, and a sedentary occupation, would seem to develop an intestinal fermentation. This, to my mind, is the usual beginning of an acute ascending colitis, although dental infection and pyorrhea often play a leading part.

To the anatomical and functional causes of an acute ascending colitis let us add a cause far more common. I refer to the pernicious habit of air swallowing. A friend tells me that upon one occasion he was worried, that somehow or other nothing would remain upon his stomach, that he resolved to take a short vacation. *En route* he was tempted to try a meal of lemon pie and milk. Yet, strange as it may appear, no distress resulted; some internal craving was apparently satisfied. The common hunger appearing in the case of worry and its appeasal only by the greatest gormandizing, is most familiar. It is a case of neurotic hyperacidity; the food absorbs the excessive acid in the stomach or the gas generated in the ascending colon. Of this state I can speak from a personal knowledge. It largely explains the so-called nervous indigestion, of which we hear so much. A nervousness causes the indigestion; the indigestion, in turn, causes the nervousness; a cycle great in its possibilities and simulating any of the diseases of the gastro-intestinal tract. But let the spasm disappear; let the hyperacidity be absorbed by more food; let there be a belching or a rectal expulsion of gas. We behold a different picture. As in the case of the aching tooth, the pressure has been relieved.

I do not feel that there is much of interest to add to what I would describe as an acute ascending colitis. It may be almost subconscious, "belly conscious," or even an acute pain suggestive of gastric or duodenal ulcer. It is often confused with a pathological gall-bladder. It may be anatomic, functional or neurotic. It is the duty of the examiner to determine which. It is only by an earnest examination of the patient himself and by a competent roentgen examination of the gastro-intestinal tract that we can arrive at a satisfactory or final conclusion. To my mind every patient is entitled to this and, consequently, I would proclaim that the treatment of an acute ascending colitis is medical rather than surgical.

This treatment very naturally directs itself into the elimination of the cause. If it is due to certain malformations of the colon, some form of supporting belt or binder should be employed. If it is due to the complications of an old appendicular lesion, which alters the morphology of the ascending colon, the removal of the offending member must be considered. Be it well remembered, however, that post-operative adhesions and scar tissue must

be reckoned with. If it is due to habitus, this must be corrected as far as possible. Exercise in the open air with regular habits of defecation and the use of laxative fruits may be all that is needed. An extra supply of vitamin can be added in the form of orange or tomato juice. According to the best authorities, however, it is practically impossible to change the intestinal flora. But as buttermilk and yeast are the craze of the laity, these will do no harm and possibly some good. Small doses of barium sulphate will almost always relieve. Sometimes this must be supplemented by the use of a mild laxative, such as mineral oil or psyllium seed. Belladonna will often relieve a spasm. A change of diet is often beneficial; in any case, however, the diet must be a full and liberal one. For that other form, to which we have alluded as the "pernicious habit of air swallowing," only the relief of the fundamental obsession is likely to be of benefit. But, as most of these cases are prone to lose weight, an effort must be made to fatten them. Tact and persuasion with gaining of the patient's confidence and the attempt to restore to him a normal manner of living are the underlying factors of any treatment.

Of the many ills of the gastro-intestinal tract, which it has been my privilege to observe upon the screen and upon the roentgen plate, the status which I have discussed as an acute ascending colitis is by far the most common. It is usually included in a general discussion of the diseases of the colon and passed over lightly. But the discomfort is a real one. I believe that an acute inflammation of the ascending colon with its distention by air or gas is a real pathological entity. It must be differentiated from an inflammation of the remaining colon. Every patient, as we have said above, deserves a complete roentgen study to determine whether his complaint is an anatomical, functional or neurotic one. Corrective and supporting measures for the relief of the anatomical causes, inhibition and relief of the gas in the case of the functional causes, and moral suasion in the neurotic cases with an attempt to improve the physical condition of the patient and increase his weight, —these, in my opinion, are the treatments to be employed in the relief of the entity which I have discussed as an unappreciated source of epigastric distress and to which I would give the name of acute ascending colitis.

603-6 *Medical Arts Building.*

DISEASED TONSILS AND ADENOIDS AND INDICATIONS FOR THEIR REMOVAL.*

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In this paper I make no effort to be deeply scientific. I explain my statement by adding that my effort has been to write a paper based entirely on my personal observations and experiences, and one, therefore, I hope, practical.

Tonsils and adenoids in relation to health and disease, despite their so-called common place niche in the scheme of things medical, hold a most important place. I wish particularly to stress the presence of adenoids in the adult.

The examination of any adult for diseased tonsils, especially when local anesthesia is used, is positively incomplete without a careful effort to determine the presence or absence of adenoids. This is best accomplished by the use of the naso-pharyngoscope. Its use is quite simple and affords a direct view into the nasopharynx. It requires the use in the nose and nasopharynx of a small quantity of cocaine solution, usually about 2 per cent. About ten minutes after the application of the cocaine solution, the Holmes' direct, or corrected vision, naso-pharyngoscope is introduced into the nasopharynx through the nose and the nasopharynx is examined by direct inspection. Lacking its use, posterior rhinoscopy may be done with a small post-nasal mirror, with which an indirect view may be had of the nasopharynx. Its use, however, is frequently very unsatisfactory in individuals with sensitive throats, who gag easily.

The use of the naso-pharyngoscope is limited to individuals over fifteen years of age.

If adenoids are found in conjunction with diseased tonsils, a general anesthetic is used. The reason for this will be brought out later in this discussion.

I do not believe that a tonsillectomy should be approached with the care-free attitude that most individuals assume in regard to so important a procedure.

A great many tonsils are removed without proper consideration as to both the immediate

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and remote results. I have seen a great many patients who have had them removed with no relief whatever from the complaint which caused them to present themselves to their physician.

I wish at this time to condemn a very common practice amongst otolaryngologists, that is the very dangerous procedure of removing tonsils and adenoids without first having a complete physical examination, including a urinalysis, done on every patient to be operated upon. This I insist upon with my patients. When the reasons are explained, they are without exception all glad to have this done. Of far less importance is a coagulation time if a careful history is taken before the operation. The most important question, in any given case, is to decide whether this particular individual is going to obtain the expected and desired relief from the removal of the tonsils, and, equally important, the adenoids, if any exist, especially in adults who wish to have a tonsillectomy done under local anesthesia. The complete removal of adenoids is impossible of accomplishment under local anesthesia, because the effect of its use is to very decidedly shrink the adenoid tissue, and the complete mass is seldom if ever removed. Of this I am quite confident, and have long since given up the attempt. It is in addition quite painful to the patient, and in many instances punishes them severely. I have had, in many instances, to remove the adenoids a second time on individuals who had previously had them removed under local anesthesia. In several instances, amongst my own patients, I have had to subject them to second operation under general anesthesia for the removal of adenoids following the use of local anesthesia for removal of the tonsils. This was due to the fact that I had not examined them for adenoids in the first instance.

For several years in my own work, if both the tonsils and adenoids have, for any reason, to be removed, and the patient cannot take a general anesthetic prolonged sufficiently to remove both the tonsils and adenoids at the same time, the tonsils are removed under local anesthesia and the adenoids at a later time under nitrous oxide and very light ether anesthesia sufficient to keep them quiet from three to five minutes. I have carried out this procedure many times with most gratifying results.

The reason for all this precaution is the fact that there is serious risk of life when a general anesthetic is used, immediately following the local removal of tonsils.

This fact is borne out by the report of a special committee which was originally appointed by the A. M. A. to study the cause of sudden death during and following the use of local anesthesia in otolaryngology and other cases. The committee was composed of some of the most eminent internists, surgeons, and otolaryngologists in the United States, amongst them being Drs. E. C. Cutler, Peter Bent Brigham Hospital, Boston, representing surgery; David I. Macht, medicine, Johns Hopkins; Alexander Randall, urology, Philadelphia; Henry S. Dunning, stomatology, New York City; Robert A. Hatcher, pharmacology, Cornell Medical College; Charles S. Norris, Chief Medical Examiner, pathology, New York; Robert S. Lamb, ophthalmology, Washington, D. C.; and those representing otolaryngology were Dr. Emil Mayer, New York, chairman, who selected to help him with this work Drs. Ross Hall Skillern, Philadelphia; Robert Sonnenchein, Chicago, and William B. Chamberlain. The work of this committee extended over a period of eleven years, the final report having been made last year. The full report covered over one hundred large printed pages. They reported the analysis of forty-three unreported deaths during 1920-21-22, due to the use of local anesthesia. This, however, did not include all the deaths which took place, for evidently there were many, many additional cases unreported, as the questionnaire sent out by the committee was only sent to the members of the A. M. A. who were members of the section on otolaryngology and ophthalmology:

Deaths caused by—

Alypin	1	Cocaine	26
Butyn and Cocaine	1	Not classified	2
Slovaine	1	Bertyn	4
Apothesine	4	Procaine	2
Other causes than local anesthesia			2

One of the recommendations embodied in this report was the condemnation of the use of general anesthesia, following immediately the use of local anesthesia. The committee also found that "not a single synthetic preparation thus far presented for our use, as a local anesthestic, is non-toxic. This does not deter us from its use, but it will surely put us on

guard and free us from the belief that any one of them is absolutely free from danger."

At Camp Lee during July, August, and September, 1918, we did an average of fifty local tonsils each day. In August there was done seven hundred and fifty locals. Of the total number done during those three months there was not a single serious toxic manifestation due to the use of local anesthesia. The anesthetic used was novocain 0.6 per cent with five drops of 1 to 1,000 adrenalin chloride to each six drams of solution. This solution was always freshly prepared under the direct supervision of the officers in charge.

In my private practice I found that this amount of adrenalin caused a severe splitting headache, and some of the patients complained most bitterly. I am still using 0.6 per cent novocain, but have decreased the amount of adrenalin to two drops of 1 to 10,000 to each six drams of solution. I also use an ampule of coagulin to this amount of solution.

In the use of local anesthetics for nose and throat work, especially tonsillectomies, I observe the precaution of preparing, freshly, myself, every drop of local anesthetic used. I will not use a solution prepared and handed me by someone else. This precaution is well worth taking for the very important reason that a large number of deaths have occurred as a result of mistakes in preparation of the solution used.

Anyway you take it, the removal of tonsils and adenoids is a procedure worthy of a great deal more serious consideration than the average physician, specialist, or layman accords it.

The most useful method of examining these patients is as follows: First, a careful history must be taken. This is of great importance, because, from the history alone, we may be able to determine the necessity for operation. The next thing to do is to inspect the tonsils. The tongue is held down by metal tongue depressor, care being used not to place the depressor a little more than halfway back on the tongue. This prevents gagging and allows a much more satisfactory examination. We note the condition of the anterior pillars, whether red and injected; scars showing previous peritonsillar abscesses; whether the tonsils are small or hypertrophied; submerged or projecting into the pharynx; whether the follicles and crypts contain visible pus or concretions, and whether there are many inflamed granular patches on the posterior pharyngeal wall.

Whatever the condition of the tonsils might be, the best method of examining them is the use of a long, curved very rigid steel applicator, with cotton wound about the tip. The curved portion of this applicator is placed against the anterior pillar with sufficient upward and outward pressure to express pus and at the same time evert the tonsil, bringing the crypt and follicles into view. The expression of free pus, or large quantities of foul-smelling cheesy material is, in itself, sufficient indication for removal of the tonsils. But when this condition exists in combination with any one of the many conditions by which a focus of infection makes itself known, viz., deafness of various types, exclusive of otosclerosis, severe tinnitus aurium, with or without deafness, vertigo, low blood pressure, general debility, arthritis, not due to G. C., or other foci, neuritis, pyelitis, frequent attacks of tonsillitis, previous incomplete removal of the tonsils, certain types of kidney disturbances, especially albumen with none of the other signs of a nephritis, thyroid enlargement, endocarditis, acute or chronic, pericarditis, with or without effusion, glandular infection, both of the anterior and posterior cervicals, certain cases of hypertension, recurrent attacks of otitis media acute suppurative, and chronic otitis media suppurative. Free pus being associated with anyone of these conditions, the indication for removal of the tonsils and adenoids becomes absolute.

I have never seen the removal of tonsils help materially in cases of acute or chronic nephritis except in children.

Where there is sufficient doubt to warrant it, a culture may be taken deeply from the crypts of the tonsils. If it shows the presence of any one of the various strains of streptococous, this may be taken as a positive indication for the removal of the tonsils.

In cases of arthritis, I nearly always have a culture made at the time of removal of the tonsils, and if it shows any of the strains of streps, I have an autogenous vaccine made for use at a later time if the patient does not show the expected improvement. Its use will frequently obtain extremely satisfactory results especially where there seems to be some permanent enlargement of the joints.

In cases of doubt I have on several occasions examined the throats of some of my patients as many as ten or twelve times before coming to the conclusion that the tonsils should be

removed. Some of the most dangerous and troublesome tonsils are the small submerged tonsils, and seemingly innocent ones. I have on several occasions seen tonsils which contained deep abscesses on removal, yet at the time of examination showed absolutely no free pus. The mere fact that tonsils are hypertrophied does not mean that they should be removed.

With children under ten years of age the question of removal of the tonsils frequently depends entirely on the history. Frequent colds, bronchitis, frequent attacks of unexplained temperature, otitis media, mouth-breathing, general appearance, condition of nourishment, progress in school, glandular enlargement, and frequent attacks of sore throat. The examination of children for tonsils and adenoids is no easy task; one has to judge almost entirely from the appearance of the tonsils together with the above conditions for indications for removal. I wish to speak of one of the methods of examination only to condemn it, that is, the introduction of the finger into the nasopharynx through the mouth. This is hardly necessary, for in the course of the removal of tonsils and adenoids of hundreds of children I have not seen one who did not have adenoids, and who was not benefited by their removal.

I would like to report a case which shows the importance of examination for adenoids. White woman, age sixty-seven, complaining of deafness, was treated by me for a period of six weeks, using all of the usual methods of treatment—inflation, massage, etc. On account of her age, it never once occurred to me that she might have adenoids. However, one day a ray of light passed through my brain,—examine this woman for adenoids. Adenoids she did have, and quite as large a mass as one would expect to find in a four year old mouth-breather, the removal of which promptly relieved her deafness. This was done in 1924. She occasionally comes in to see me about other things, and her hearing is still normal.

It is impossible to write a paper on this subject without going over some of the contra-indications and complications. Cases with active tuberculosis of any type, in my judgment, should be let severely alone from an operative standpoint. Tubercular involvement of the larynx is a positive contra-indication, as also a diabetes, anemias, except those secondary to a focus of infection, acute or chronic parenchymatous or interstitial nephritis; likewise, myocarditis, especially with decompensation, acute nasal and bronchial affections, asthma under general anesthesia, anomalous blood-vessels.

There are a number of complications which may be a source of considerable annoyance and discomfort, even danger to the patient. Among these are hemorrhage at the time of operation and post-operative, as late as ten days or two weeks. Adenoid hemorrhage is occasionally very, very difficult to control. I have seen one child die as a result of this, and on one occasion very nearly lost an adult patient myself from adenoid hemorrhage occurring eight days after removal. Other conditions to be remembered are abscess of the tissue contiguous to the fossae, hematoma, acute enlargement of the thyroid with thyrotoxicosis (rare, but it does occur), lung abscess, pneumonia, otitis media, acute suppurative, or exacerbation of chronic otitis media.

The conclusion I have reached is that the removal of tonsils and adenoids is not the simple procedure most people regard it, and that there should be definite indications before subjecting an individual to this procedure. At the same time it is one of the most useful and health-giving procedures at our disposal.

Medical Arts Building.

GIARDIASIS.*

By PAUL F. WHITAKER, M. D., Kinston, N. C.

The literature relating to intestinal protozoa, with the exception of endamoeba histolytica, is much confused. While there is no doubt as to the pathogenicity of endamoeba histolytica, there is a wide difference of opinion as to the pathogenicity of most of the intestinal flagellates, including giardia intestinalis. There are some writers, notably Boeck, who after careful studies conclude that it is an entirely harmless parasite, incapable of producing symptoms, while there are others, including Lyon, Cheney, and Reed, who are quite convinced that it may cause marked disturbance. A personal communication to the writer from Dr. Walter C. Alvarez, of the Mayo Clinic, stated that in his own opinion he believed it to be pathological, but qualified that statement by saying that every other condition capable of producing the trouble in question should be eliminated before concluding that the symp-

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toms were due to giardia. Without going further into this difference of opinion, the writer is convinced from experience with his own cases that giardia is distinctly pathogenic, and that its presence may explain many obscure and bizarre gastro-intestinal manifestations.

Giardia lamblia is a pear shaped organism, measuring from 10 to 20 microns in length. It has both a blunt or rounded end, and a pointed end. When viewed in its broad dimension, it has, on the ventral surface of the blunt end, a circumscribed depression with elevated edges, "the sucking disc," by which it attaches itself to the tops of the epithelial cells of the intestinal walls. Within this depression two nuclei are seen, symmetrically placed on either side of the midline. The organism has four pairs of flagella, three emerging from each side of the organism, and one pair trailing from the small pointed end. In the stools, giardia appears to bob about briskly with a peculiar tumbling motion, but without true progress in any direction. The normal habitat of giardia is in the duodenum and jejunum, and the motile flagellate form is not usually found in the stools unless the patient has diarrhea or has undergone active purgation. It is readily and easily recognized in the duodenal contents, however. There has been much discussion as to whether the motile form invades the biliary system. Smithies has reported the only case on record where the parasite was found in a gall-bladder removed at operation.

At some period in their life history the flagellates undergo encystment. These cysts are passed out in the feces, and the finding of them is the common method of detecting the presence of an infection. They may be extremely numerous and, while less conspicious than the motile forms, are easily identified. They appear as small, oval, sharply outlined bodies with a rather complicated and minute inner structure, surrounded by a fairly thick hyaline wall.

While different species of giardia have been found parasitic in man, dogs, cats, rabbits, rats, mice, and frogs, Simon was unable to infect rats with the human giardia and it may be concluded that human giardiasis is of human origin only. It seems certain that human giardiasis is spread from one person to another by ingestion of the cysts that occur in the feces. Man may ingest the cysts directly by contamination with faeces on his fingers, food, or water; indirectly through the agency of the housefly, which may feed on faeces containing the cysts, and then deposit them on food or drinking water. According to Boeck, the cysts may live for sometime in water, but die quickly on drying. It is, therefore, doubtful that the cysts are ever airborne in dust in a viable state.

Until fairly recently, giardia has been considered a parasitic infestation of only tropical or subtropical zone. More recently it is being increasingly recognized in temperate zones, and is probably now much more common than is generally recognized. While as already stated its pathogenicity has been disputed, in the light of experience with the following cases, the writer finds it impossible to believe that it is a safe or harmless parasite under any circumstances. All of the cases reported had a complete diagnostic survey.

Case No. 2280. Mr. L. E., age twenty, student by occupation. Came in complaining of indigestion of approximately eighteen months duration. He is troubled with eructation of gas almost constantly after eating. and has been constipated since the onset of his trouble. For the past month he has had a vague pain and sense of uneasiness in the upper right abdominal quadrant which radiates into the retro-sternal area and right shoulder. The patient is relieved for approximately an hour by eating. His appetite has gradually diminished and he has lost twelve pounds in weight. He is nervous and apprehensive over his condition. Six months after onset of symptoms he had his tonsils removed. He has never been beyond the boundaries of North Carolina, save for a visit to Washington, D. C., during his senior year in high school.

Complete physical examination revealed nothing of significance save tenderness on deep pressure in the epigastrium just to the right of the midline, and tenderness in the right costo-vertebral angle. The blood revealed a mild secondary anemia, the R. B. C. being 4,120,000, and the hemoglobin 76 per cent. The Wassermann was negative, and the differential count revealed 4 per cent eosinophiles. The urine and blood chemistry were negative. Gastric analysis revealed a normal curve of free and total acidity, and showed no blood. Gastro-intestinal X-ray was negative, and the stomach emptied in six hours. The stool examination revealed the presence of encysted

forms of giardia and the duodenal contents contained the flagellate forms. *Diagnosis:* 1st. Secondary anemia; 2nd. Giardia infestation.

The patient was given six injections, 0.6 gm. each, neo-arsphenamine, at weekly intervals, and six trans-duodenal biliary drainages with the instillation into the duodenum of saturated solution of magnesium sulphate. He was given liquid petrolatum for the constipation, and iron and arsenic by mouth for the anemia. One week after the sixth injection of neo-arsphenamine, both the stool and the duodenal contents were negative for giardia, and the digestive symptoms and constipation were improved. Three months after beginning treatment the stool and duodenal contents were still negative for giardia. The patient has gained a total of eight pounds in weight, and was entirely free from digestive symptoms, pain and constipation. He has been asked to return in a year for another examination of his stool and duodenal contents.

Case No. 2278. Mr. F. M. M., age sixty, referred by Dr. S. Occupation, merchant. His chief complaint was diarrhea, head trouble, sense of itching around the neck and on anterior surface of legs; numbness and tingling in feet and legs, and sense of burning in the hands. The patient states that he was a healthy man until 1918, when he had influenza. Since that time his health has steadily declined. He has almost a constant dizziness with tinnitus and discomfort in his ears. A dull aching pain around the occiput is constantly present, and at times becomes severe. He has gradually grown weaker and at times staggers when he walks. He is intensely nervous, and suffers from insomnia. Diarrhea has been almost constant for twelve years, having from eight to twelve stools a day. At times he has had as high as thirty stools a day. The diarrhea is worse in the morning, is not accompanied by colicky or griping pains and, though his stools contain a great deal of mucus, only occasionally have they contained blood. He has been to numerous physicians, and taken much medicine with only temporary if any relief. He was residing in Texas when his present illness started. He denies venereal infection.

Complete physical examination revealed the following positive findings. The patient's countenance was dull and expressionless. He had a festinate gait and a scanning speech, and a gross intention tremor of the upper right extremity. Examination of the eye grounds revealed a blurring of the right disc. Physical examination of the chest and abdomen was essentially negative.

Laboratory examination revealed a moderate secondary anemia, the R. B. C. being 3,210,000, and hemoglobin 70 per cent. Gastric analysis revealed essentially normal curves of free and total acidity, and contained no blood or lactic acid. The duodenal contents were teeming with the motile forms of giardia, and the encysted forms were found in the stools. Spinal puncture did not reveal increased intra-cranial pressure, and the cell count and spinal fluid Wassermann were negative. There was slight increase in globulin. The urine and blood chemistry were negative. X-ray of the skull, and complete gastro-intestinal X-ray, including a barium enema, was negative. Basal metabolism determination revealed a basal metabolic rate of plus 4 per cent. *Diagnosis:* 1st. Paralysis agitans; 2nd. Secondary anemia; 3rd. Giardia infestation; 4th. Chronic diarrhea probably of protozoal origin.

The patient was given eight injections of 0.6 gm. of neo-arsphenamine at weekly intervals, with trans-duodenal drainage, and magnesium sulphate instillations. He was given hyoscine and Tr. hyoscyamus for the Parkinsonian syndrome. The improvement in the diarrhea was striking after the third injection of neo-arsphenamine. One month after the end of treatment, the patient's diarrhea had ceased, and he was having from one to two normal stools daily. The anemia and general appearance of the patient had improved, the red cells and hemoglobin being 4,020,000, and 80 per cent, respectively. This case is reported not because we believe that giardia had anything to do with the etiology of paralysis agitans, but in view of completely negative findings, save giardia infestation, to explain the etiology of the diarrhea, and, in view of the results obtained on treatment, we believe conclusively that it was the sole etiologic factor in the diarrhea.

Case No. 342. Mr. J. R., age thirty-six. Farmer by occupation. First seen in October, 1925. His previous history revealed nothing of importance. His family history revealed the fact that his mother and father died of pulmonary tuberculosis, and an uncle died of

cancer of the stomach. The chief complaint was stomach trouble of three years duration. About one-half hour after eating he would develop a feeling of fullness and distention in the epigastrium which was relieved somewhat by eructation of gas. On an empty stomach he would at times develop a gnawing burning pain, which would be relieved for approximately an hour by eating. The pain did not radiate. Occasionally he suffers from sour stomach which soda relieves. He has never had jaundice, has never vomited or passed blood by bowel, has never had dysentery, and has never had an attack of abdominal pain requiring a hypodermic to relieve. He is chronically constipated, taking laxatives three or four times a week. He feels better after a dose of magnesium sulphate. In addition to the gastro-intestinal complaints, he suffers from early fatigue, occasional frontal headaches, which are not of the migraine type, and nervousness. The digestive symptoms often cause him not to sleep well. His average weight is 145 pounds. His present weight is 128 pounds.

Physical examination shows an intelligent man of thirty-six years, of average build and height. He impresses one as having a phlegmatic temperament. Examination of the heart and lungs were entirely negative. Examination of the abdomen revealed definite tenderness in the upper right quadrant which was made worse by left lateral posture, and dorsal tenderness was elicited in the right costovertebral angle. The abdominal and remaining examination was otherwise negative. Blood and blood Wassermann were negative. Gastric analysis showed the presence of adequate free hydrochloric acid and no blood was present in the gastric contents. The stool was negative for ova and parasites, and negative for occult blood. (The writer was not familiar with giardia at that time, and may have overlooked them in the stool.)

Diagnosis: Chronic cholecystitis. The patient was given series of twelve trans-duodenal biliary drainages twice a week, belladonna and caroid and bile salts tablets with considerable symptomatic relief. In June of 1926, he returned again with practically the same complaints and findings. I taught him how to use the duodenal tube, and instructed him to use it twice a week for a period of three months. Again he obtained some relief from symptoms and, while not entirely relieved, remained fairly well until September, 1927, when he consulted me again. For the four weeks before consulting me he had suffered almost constantly with a gnawing burning epigastric pain, which radiated into the right shoulder. The previous tenderness in the upper right quadrant had dimished, and he was tender on deep pressure just to the right of the umbilicus. A gastric analysis done at this time showed a mild hyperacidity. He was placed on six feedings a day of a non-irritating diet, and alkaline powder four times daily and belladonna.

I heard nothing from him until March of this year when he came in to see me again. Since seeing me in 1927, he had consulted two other physicians and a chiropractor who, like myself, had not benefited him. His patience, fortitude, and charitable feeling toward the medical and chiropractic professions in the light of his disappointing experiences for nearly five years struck me as worthy of comment. In addition to the same old gastro-intestinal complaints he had become extremely nervous, and apprehensive over his condition, and had lost weight until he then weighed only 115 pounds, and was profoundly depressed. I again studied this patient exhaustively. Complete physical examination and laboratory studies were negative save for a moderate secondary anemia, the red cells being 4,447,000, and the hemoglobin 77 per cent. Gastro-intestinal X-ray revealed no demonstrable pathology. Examination of the duodenal contents showed them to be teeming with the motile form of giardia, and the stool contained the encysted form.

The patient was given the usual course of neo-arsphenamine, and again asked to use trans-duodenal drainage. It has been eight months since he started treatment the last time, and five months since he has had any treatment. He has gained twenty-one pounds, looks and says he feels like a different person. His digestive symptoms have disappeared. A stool examination one month ago failed to show the encysted form of giardia. My opinion is that this patient is cured and, had I been familiar with and recognized giardia infestation in 1925, it would have saved this patient five years of suffering besides the economic factor of time lost, and money expended for professional services.

The writer has had, including the three cases

reported above, a total of nineteen cases of giardia infestation. In three of these which time would not permit me to report, the symptoms could be definitely attributed to giardia alone, and the results of treatment were as striking as those reported. In the remaining thirteen, other conditions capable of producing the symptoms were found, and no conclusions as to the pathogenicity of giardia was drawn from these cases.

In closing, it is well to discuss briefly the treatment of this parasite. A review of the literature records numerous drugs used in the treatment of this condition, among which might be mentioned neo-arsphenamine, yatren, thymol, stovarsol, santonin, emetin, bismuth, castor oil, magnesia, sodium bicarbonate, dilute hydrochloric acid, salol, turpentine, sulphur, etc. In the hands of the South American writers, notably Greenway and Caxtex, stovarsol and yatren have given the best results. Thymol is used chiefly by the men reporting cases on the Pacific Coast. The writer has used yatren in one case along with emetin which had both an amoebic and a giardia infestation. This case is showing marked improvement under treatment, but has not been under observation long enough to warrant definite conclusions. The writer obtained such satisfactory results with neo-arsphenamine, and magnesium sulphate intra-duodenally that he has continued this treatment routinely, and still with satisfactory results. The contention of Lyon that magnesium sulphate intra-duodenally seems to have an inhibiting or paralyzing effect on the parasite is borne out by my experience, as numerous motile forms are seen in the duodenal aspirates after this drug is used. It would seem from the literature that in most instances adequate doses of neo-arsphenamine have not been given, and it is only in this instance that its use has been disappointing.

Summary: 1. Giardia intestinalis is a parasite of clinical importance, being increasingly recognized in temperate zones. 2. In the writer's experience it has a definite pathogenicity. 3. Adequate treatment with neo-arsphenamine, with duodenal-biliary drainage, and instillation into the duodenum of saturated solution of magnesium sulphate, has given satisfactory results in the author's cases.

Bibliography

1. Clinical Diagnosis by Laboratory Methods. Todd and Sanford. Sixth Edition.
2. Giardiasis: Frequency, Recognition, Treatment and Certain Clinical Factors. By B. B. Vincent Lyon and William A. Swalm. *American Journal of the Medical Sciences*, Sept., 1925.
3. Giardiasis In Man. By William C. Boeck. *Archives of Internal Medicine*, Jan. 15, 1927.
4. Intestinal Protozoa in Clinical Practice. Clinic of Drs. Alfred C. Reed and Harry A. Wychoff, Stanford University Hospital. *Medical Clinics of North America* Sept., 1922.
5. Intestinal Protozoa. Clinic of Dr. Marshall C. Cheney, University of California Hospital. *Medical Clinics of North America*. Sept., 1922.

Medical Arts Building.

PYRIDIUM THERAPY IN GENITO-URINARY DISEASES.

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Genito-urinary infections present a large field for medical experimentation. The search for specific drugs goes on without interruption, and although the problem of urinary antisepsis has received no small measure of attention from the research investigator in the past few years, very few drugs approaching the desired results are known. One of the outstanding drugs in this class is pyridium, and it has been my privilege in the past two months to give it a clinical trial. Chemically it is phenyl-azo-alpha-alpha-diaminopyridine hydrochloride, a fine, dark red crystalline powder, slowly soluble in cold water, but soluble in boiling water, alcohol, glycerin, petrolatum and lanolin. It may be administered orally (in tablet) or applied locally (in solution, powder or ointment). Our clinical experiments were made to establish the claims that pyridium is non-toxic and non-irritative in therapeutic doses, having marked tissue penetrative power and is rapidly eliminated to a high degree through the urinary tract, staining the urine a yellowish red, that in aqueous solution it exerts an antibacterial action on the gonococcus, the streptococcus, the staphylococcus, and a milder one on the colon bacillus. Its penetrating action is shown by its staining yellowish-red the secretion of the prostate and seminal vesicles, and it has the advantage of being therapeutically active in both acid and alkaline urines. It is generally used in tablet form, each tablet containing 0.1 gm., dosage usually two tablets after each meal; in liquid form in 1 per cent aqueous solution for irrigations, injections or

local application; in powder form, as a dusting powder; or in ointment form as in application to ulcers.

In the short space of two months during which this drug, pyridium, has been given a clinical trial, two classes of cases have shown outstanding results; these are (1) cases of infection in the prostate; acute, subacute and chronic (lower urinary tract infections), and (2) cases of chronic and subacute pyelitis and pyelonephritis (upper urinary tract infections). About twenty cases of prostatitis, several bordering on subacute states (almost demanding rest in bed), have been treated and responded to two tablets after meals, with subsequent marked progress in their clinical symptoms (particularly pain and urinary frequency) and marked improvement in the smears of prostatic secretion made on each visit.

Compared to prostatitis, it is much harder to substantiate progress in chronic pyelitis cases, but freedom from all clinical symptoms and careful weekly urinalyses have demonstrated fully to me the marked benefit obtained by use of pyridium in therapeutic doses.

Case 1.—E. G., male, white, married, age twenty-three, chauffer, had a very severe subacute prostatitis following a gonorrheal infection. First seen August 24, 1930. For a month usual treatment very mild massage with bladder irrigations and sandalwood oil p. o. was then put on pyridium, and at once improvement noted. Massage continued, followed by posterior instillations of ½ per cent strength. Pyridium was continued and progress noted. At first this treatment was very irritating, but later it was comfortable and the prostatic secretion was very definitely colored by pyridium. Prostatic secretion on December 8, 1930, showed very few (8-10) pus cells to high power field. Greater progress made in this fulminating case than in similar ones without pyridium.

Case 2.—W. W., single, male, white, salesman, age twenty; had had gonorrhea for six weeks; self-treatment by using 15 per cent neosilvol; when first seen October 4, 1930, had a subacute prostatitis with severe backache and pain in both limbs to knees; put on semi-weekly massage with posterior instillations pyridium ½ per cent, and one pyridium tablet after meals. Rapid progress made in three weeks under this regime, seemingly more than usual for average case, and at end of stay here secretion showed an average of 6-10 pus cells to high power field of microscope, patient being free from all symptoms.

Case 3.—N. T. F., male, white, widower, labor leader, aged sixty-four, had a previous gonorrheal infection in 1929, and treated until discharged cured. On admission June 14, 1930, the prostate was found to be enlarged to left, with a very spongy spot on right side which bled on even very light massage. The usual treatment was given during the first month; later one tablet after meals was added, and semi-weekly massage was followed by instillations. Marked improvement occurred during the two months when using pyridium, until discontinuance of treatment because of freedom from all symptoms.

Case 4.—S. M., male, single, white, lawyer referred by a gastro-enterologist for examination of prostate; prostate large, somewhat boggy and tender, so that no secretion was obtained—recommendation made to repeat examination in three or four days. Returned in six months with history of a non-specific urethritis treated elsewhere. On prostatic examination, the secretion was found to contain 50 or more pus cells to each high power field. Massage was continued sporadically for five months and a recent examination of the prostate showed an average of 10 cells to H. P. F. Pyridium treatment with massage every five days was then instituted. Examination after six weeks (December 8, 1930) showed the prostate to be apparently normal, and the secretion having an average of 5 or 6 cells to the high power field.

Case 5.—C. A. A., male, white, bank clerk, single, first seen September 24, 1930, when a diagnosis was made of chronic prostatitis and numerous urethral strictures. Venereal diseases denied. Passage of sounds caused much bleeding at first. Then put on pyridium, one tablet after meals. Bleeding disappeared, urine improved rapidly, and patient was able to continue his daily routine. Prostate improved rapidly, as well as rapid change in number pus cells in prostatic secretion. Patient was on rest period December 10, 1930. Prostate to be examined again; patient free from all symptoms.

Case 6.—L. B., male, married, white, printer, first seen on account of pain in left scrotum. Examination showed left varicocele. Suspen-

sory recommended. Not seen again until September 15, 1930, at which time examination showed acute gonorrheal urethritis. Patient was under treatment by his family physician with whom he wished to continue. Again seen October 28, 1930; diagnosis now made of subacute prostatitis; for five days stayed in bed, using hot rectal irrigations and pyridium one tablet after meals, and then resumed ambulatory treatment, the pain in back and urinary frequency having abated. Light massage every five days was soon followed by more strenuous massage semi-weekly until now the urine is clear and all symptoms are gone, but the prostatic secretion still shows 30 pus cells to high power field. The progress of effective treatment was good for the short time treated.

Case 7.—A. V., single, male, white, teacher of French, has suffered from a chronic stubborn prostatitis since October 6, 1926, for which, periodically, he takes a few massages and irrigations. On September 22, 1930, he came in with a mild flare-up of old symptoms and he was given a potassium permanganate irrigation (1-6000), through and through, and put on pyridium, one tablet after meals. One week later all symptoms had subsided, and on massage secretion from prostate showed 35 pus cells to high power field. He remarked on the rapidity with which the symptoms disappeared, but failed to report for further treatment.

Case 8.—W. C., male, married, white truck driver, treated in 1926 for a mild, chronic prostatitis with urethral strictures. Occasional monthly visit since for dilatation. Seen on September 30, 1930, when a Kollman dilator was used to dilate his old urethral stricture. The dilatation was carried to size French 32. About three days later he had a purulent urethral discharge, in which no organisms could be found. A mild potassium permanganate anterior irrigation was given (1-6000) and he was put on pyridium, one tablet after meals. Four days later no discharge could be obtained, and examination of the prostate showed numerous pus cells per high power field. We were agreeably surprised at the rapidity with which symptoms of urethritis subsided.

Case 9.—B. H. M., male, married, government clerk, aged sixty-one, seen first April 19, 1930, at which time cystoscopy showed ten ounces residual urine, and a diagnosis of prostatic hypertrophy was made. Subsequently the prostate was removed, and the abdominal wound healed within three weeks. Ten days after leaving hospital he developed a mild epididymitis on the left side, which responded favorably and quickly to pyridium treatment, one tablet after meals, and elevation of the parts with a suspensory. The patient lost no time from work on account of infection. A few treatments to the bladder and prostatic region removed the pathology back of epididymitis, with complete clearing of urine and symptoms. In this case pyridium apparently was responsible for excellent results obtained.

Case 10.—Mrs. D. B., female, white, married, housewife, aged twenty-four, referred by a general surgeon for chronic pyelitis after he had treated the patient with bladder irrigations and instillations for two months with only slight improvement. Cystoscopy and ureteral catheterization showed bilateral infection and at first silver nitrate 1-3 per cent was used as the solution for irrigating the pelvis of the kidneys. Occasional bladder irrigations with potassium permanganate were given and then were followed by instillations of 10 per cent argyrol, but the irregularity of attendance of patient to our clinic retarded progress of favorable results. Later pyridium in full dosage, two tablets after meals, as well as the 1 per cent solution in the kidneys seemed to help, but very little permanent gain has been made in the ambulatory treatment in fifteen months. The patient, who is the daughter of a doctor, says pyridium is the best drug used, and she has tried many, and it is my opinion that the best results so far obtained have been made while on pyridium. Hospitalization with several frequent irrigations of kidney pelvis is urged and will probably be attained shortly.

Case 11.—Mr. F. J. Y., male, white, widower, aged eighty-four, had a suprapubic two-stage prostatectomy three years ago, which was complicated by left epididymitis several weeks after reaching home. Sporadically a mild flare-up in epididymitis accompanied by cystitis has occurred and was in each instance relieved quickly by a suspensory, pyridium by mouth, one tablet after meals, and dilatation of the neck of the bladder with Kollman dilator, followed by instillation into the bladder of a weak solution of pyridium. Two or three visits are made about every three to four

months, after which the patient remains well for several months Pyridium by mouth in such a case is unusual in its rapid action in decreasing the infection as well as in subduing urinary frequency and pain.

Case 12.—Mrs. C. C. L., female, married, white, vocalist, aged fifty, has suffered for past ten months with bilateral chronic pyelitis. Cystoscopy with double ureteral catheterization was done on February 24, 1930, at which time 15 per cent argyrol was used to irrigate kidney pelvis with only a fair result. The patient was then put on full doses of caprokol, which removed all symptoms with the exception that the urine was full of pus until April 3, 1930, at which time a second attack put her in bed with fever, nausea and pain over kidney area. Cystoscopy was again advised and refused, and none has been allowed since. The patient was then put on a full dosage of pyridium, two tablets after meals resulting in marked improvement, and up to present time, December 1, 1930, she has had no more attacks. She now uses one tablet of pyridium after each meal. Frequent urinalyses have shown consistent, steady improvement.

Case 13.—L. R., white, male, married, Greek waiter, aged forty, was first seen August 29, 1930, complaining of pain over entire bladder and right kidney area, with the urine very dirty and cloudy. The patient gave a history of having had a diagnosis of tuberculosis of the right kidney in the out-patient department of Johns Hopkins Hospital in February and March, 1929, when removal of his right kidney was recommended. Examination on September 19, 1930, showed a markedly decreased function of right kidney, but no acid fast bacilli could be found in the urine from either side, but were found in the bladder urine. An examination was repeated on October 23, 1930, with identical findings; and an operation of the right kidney was again recommended. The right kidney pelvis was irrigated with 1 per cent pyridium on each examination and patient was certain that the urinary frequency and pain were subsiding, but no gain could be seen. Pyridium after meals and instillations were used consistently for eight weeks but no permanent change could be seen, the most appreciable gain being noted by the patient in a decrease of the severity of pain and urgency.

Case 14.—Mrs. A. C., female, white, married, housewife, aged thirty-five, developed pain over bladder with frequency and burning on urination on October 20, 1930, six weeks after delivery. Urinalyses showed many pus cells, a moderate number of clumps, and a stained smear showed the offending organism to be the colon bacillus. Her husband, a physician, consulting me, said that he had put his wife to bed, and began an old therapy of three days of alkali by mouth, followed by three days of acid sodium phosphate with urotropin. I suggested two tablets of pyridium after meals, which was followed by marked improvement in all symptoms. The patient did not have to stay in bed, and there was an almost complete clearing up of urine. The last urinalysis, made December 5, 1930, showed no pus and but a small amount of epithelium. Cystoscopy was recommended and refused. The use of pyridium is being continued.

Case 15.—R. J. R., male, white, married, age forty, investigator, U. S. Customs Bureau, had a chronic prostato-vesicular infection following gonorrhea; under observation off and on since September 24, 1927. Had had a great deal of massage, followed by instillations and irrigations of various agents, such as silver salts; used caprokol for a long time. Seen recently and put on pyridium. At first objected strenuously to stain; later, objection over-come by the marked benefit obtained by one tablet after meals over period of two weeks with occasional massage. Seen last November 11, 1930, and reports no trouble in G. U. tract. Urine is clear and he feels better than at anytime in past three years. He is continuing use of pyridium.

Our observations show that in male gonorrhea there is a decided improvement in the subjective symptoms within a short time of the administration of pyridium; in chancroids, there is definite improvement noted in twenty-four hours; and as a general urinary antiseptic the drug has been decidedly effective as an adjuvant to instrumental measures in urinary infections. This short clinical report is offered in the belief that we have in pyridium a most valuable addition to genito-urinary therapy.

BIBLIOGRAPHY

1. Belfield & Rolnick: *J. A. M. A.*, 89:2106, December 17, 1927.
2. Wolbarst, A. L.: *Med. Journal & Record*, 272-273, September 19, 1928.

3. Pugh, W. S.: *Med. Journal & Record*, 414-416, April 18, 1928.
4. Walther, H. W. E.: *Southern Med. Journal*, Vol. XXII, No. 2, February, 1929.

1835 *Eye Street.*

NEISSERIAN ABSCESS OF TYSON'S GLANDS.*

By THOMAS V. WILLIAMSON, M. D., Norfolk, Va.
Staff Urologist to St. Vincent's and Protestant Hospitals.

No mention of abscesses in Tyson's glands is made in the late text-books, or in the current medical literature, that the writer has seen. Two frank gonorrheal abscesses in what must have been the glands of Tyson have been treated by him within the past eighteen months, and it may serve to round out our knowledge of gonorrheal infections somewhat, if these cases are reported.

Very scant descriptive treatment is accorded the glands of Tyson in either anatomy or histology. The most that is said of them is that there is a ring of large sebaceous glands around the glans penis called Tyson's glands. They empty externally, are particularly numerous on the anterior surface of the corona, and they secrete a substance of pungent, disagreeable odor, which secretion, when allowed to accumulate beneath the prepuce, caseates into smegma.

On each side of the penis, at the junction of the frenum and the corona, may be seen what is apparently the opening of a gland duct. In the absence of anatomical mention to the contrary, it is assumed that they belong to the Tyson group also. Jordan, in his text-book on histology, quoting Lewis, says of them, "The so-called glands of Tyson are shallow non-glandular epithelial pockets opening near the frenulum preputii."

With a desire to be strictly accurate, Jordan evidently seeks to draw a distinction between these two non-glandular pockets and the rest of the true sebaceous glands which secrete smegma and which, in contra-distinction, he calls preputial glands. Recent works on urology, however, make no such fine distinction, but class all of the preputial glands under the head of Tyson's. In either event it seems that the correct nomenclature is employed here, because it is the epithelial pockets, the "co-called glands of Tyson" of Jordans' classification, that is had in mind.

*Read before the Seaboard Medical Association of Virginia and North Carolina at Elizabeth City, N. C., December 2-4, 1930.

Case 1. A white man, aged twenty, presented himself for examination with the complaint of a painful lump beneath the glans penis. The trouble started six days before as a small, hard sore spot beneath the mucous membrane, and, steadily becoming more painful, it had increased greatly in size.

No history of previous venereal disease could be elicited. The patient was exposed to possible infection by the usual method ten days previously.

On the right side of the ventral surface of the penis, just at the junction of the corona and the frenum, was situated a fluctuating tumor, about the size of a large pea, which seemed to be an abscess. The classical signs of inflammation were clearly evident. The tumor was entirely closed over by integument, there being no external drainage.

There was no discharge whatever from the urinary meatus, and the urine itself was of crystal, sparkling clearness.

A tentative diagnosis of peri-urethral abscess was made. The tumor was incised. It contained several generous drops of white pus, in which were many Gram-negative intracellular diplococci. The abscess was shallow; it did not encroach upon the urethra, and no connection whatever with it could be established. At no time in the course of the infection did the process involve the urethra. The urine remained clear, and there was never the slightest sign of urethral discharge.

The abscess was evacuated through a stellate incision, and the cavity was painted with 5 per cent mercurochrome solution. In two weeks it had closed up and disappeared.

Comment. If the abscess had been of the ordinary periurethral pathology, a heavy induration within the spongy portion of the penis could have been felt, while at the same time a hardened, cord-like fistulous tract could have been palpated leading from the abscess to open into the urethra. None was noticed or detected. One does not usually think of a peri-urethral abscess being present without urethral discharge. There was no discharge in this case and the urethra received no treatment of any kind. Since the glands of Tyson are the only type located in this particular region, it is logical to conclude that the gonococcus entered the patulous duct of one of them, and set up a superficial abscess which

was too deep to be a balano-posthitis, and too shallow to be a peri-urethral involvement.

Case 2. The second case came in a few months later. He was a white man, aged twenty-four, who had suffered an acute gonorrhea four years previously. He had been exposed recently to reinfection, and gave a history very similar to that outlined in Case 1. The painful swelling beneath the penis had persisted for three days with gradually increasing intensity. There had been no burning on urination, and no urethral discharge had been noticed.

Examination revealed an elongated prepuce. A small abscess to the right of the frenum near the corona was exuding white pus. This pus contained numerous intracellular gonococci. While there was no discharge from the urinary meatus, the urine contained a few shreds which seemed to be the catarrhal remnants of the first gonorrheal infection. No gonococci were found at any time in the urethra or adnexa, nor did the urine ever show any evidence of a gonorrheal re-involvement. No connection between this abscess and the urethra could be demonstrated.

This abscess was also incised and the shallow cavity treated with mercurochrome. Under this treatment, it disappeared in a week.

No balanitis, which could be fairly diagnosed as such, co-existed with either of these cases.

Conclusion. Gonorrheal abscess of Tyson's glands may exist independent of, or in the absence of, urethral gonorrhea.

818 *Medical Arts Building.*

Correspondence

A Suggestion.

Richmond, Va.,
May 6, 1931.

To the Editor:

I would like, through the columns of the next issue of the Virginia Medical Monthly, to call the attention of the Council of the Society to the desirability of accumulating a fund for the relief of the members who may need financial assistance. (I am sure that a number of us know of cases who would qualify under such a fund.) Our dues have increased 150 per cent in the last few years and it does seem that a part of this revenue should have been devoted to some practical use.

I sincerely hope that the Council will recommend something along this line at the next meeting of the Society.

Ramon D. Garcin, M. D.

Analyses, Selections, Etc.

It Might Have Come From a Doctor.

The following letter is said to have been received by a banker in a western state. It might have been written by a physician:

Gentlemen:

I wish to inform you that the present shattered condition of my bank account makes it impossible for me to send you my check in response to your request. My present financial condition is due to the effect of the federal laws, state laws, county laws, incorporation laws, by-laws, brother-in-laws, and outlaws, that have been foisted upon an unsuspecting public. Through these various laws I have been held down, held up, sat on, walked on, flattened, squeezed and broke until I do not know what I am, where I am, or why I am.

These laws compel me to pay a merchant tax, capital tax, excess tax, incorporation tax, real estate tax, property tax, auto tax, gas tax, light tax, water tax, cigar tax, school tax, syntax, liquor tax, and carpet tax.

In addition to these taxes I am requested and required to contribute to every society and organization that the inventive mind of man can invent and organize: To the Society of St. John the Baptist, the Woman's Relief, Navy League, the Children's Home, the Policemen's Benefit, the Dorcas Society, the Y. M. C. A., the Gold Diggers' Home, also to every hospital and charitable institution in town; the Red Cross, the Black Cross, the White Cross, the Purple Cross, the Flaming Cross and the Double Cross.

The government has so governed my business that I do not know who owns it. I am suspected, expected, inspected, and disrespected, examined, reexamined, informed, required, commanded and compelled until all I know is that I am supposed to provide an inexhaustible supply of money for every known and unknown deed, desire or hope of the human race, and because I refuse to donate to all and then go out and beg, borrow or steal

money to give away, I am ousted, cussed, discussed, boycotted, talked to, talked about, lied about, held up, held down, and robbed until I am just about ruined.

The only reason that I am clinging to life at all is to see what the hell is coming next.

Very respectfully,

—(*A. M. A. Bulletin, April, 1931*).

Woman's Auxiliary, to the Medical Society of Va.

PRESIDENT—*Mrs. J. Allison Hodges*, 5511 Cary Street Road, Richmond.
PRESIDENT-ELECT—*Mrs. M. N. King*, 1314 Westover Avenue, Norfolk.
SECRETARY—*Mrs. James K. Hall*, 3011 Seminary Avenue, Richmond.
TREASURER—*Mrs. Wm. Branch Porter*, 5125 Cary Street Road, Richmond.

Philadelphia Meeting of Woman's Auxiliary to A. M. A.

The Auxiliary will open its meeting on Monday, June 8th, with a subscription buffet luncheon in honor of all national auxiliary presidents, followed immediately by three round tables; (1) Programs for County Auxiliary Meetings; (2) The Technic and Value of a Committee on Public Relations: (3) History and Archives. These informal gatherings are designed to bring together those interested in special phases of Auxiliary work and give them opportunity to discuss the subject thoroughly during the following days. Another new feature will be a question and suggestion box.

The National Board dinner and pre-convention meeting are scheduled for evening.

The regular business sessions will be held on Tuesday and Wednesday mornings. Reports to be printed may be as long as desired (in reason) but on the floor national chairmen will be allowed exactly ten minutes, state presidents, three minutes.

On Thursday morning will be held the post-convention Board meeting, at 10 a. m. a special meeting for state and county treasurers, and at 10:30 a. m. a general round table presided over by the new president, the subject being "What Have I Gotten Out of the Convention?" At this meeting Mrs. McGlothlan will announce her committee chairmen and outline her plans for the coming year, and the subjects in the question box will be discussed. All meetings will begin precisely at the hour announced.

A program of entertainment for visiting ladies was published in the May issue of the MONTHLY under the heading "Entertainment."

Mrs. Southgate Leigh and Mrs. M. N. King, both of Norfolk, and Mrs. J. Allison Hodges, Richmond, will be Virginia's delegates to the Philadelphia meeting.

Norfolk Auxiliary.

The Woman's Auxiliary to the Norfolk County Medical Society has just issued a most interesting *Bulletin*, in which they state their aim, give a full list of officers and committees, and set forth their activities during the past year. Some interesting facts gathered from this *Bulletin* are that this Auxiliary was organized May 16, 1923, at which time semi-annual meetings were held. In 1927 it was decided to hold quarterly meetings. Starting May, 1929, it was decided to hold four regular meetings and four executive meetings each year. The Auxiliary has a membership of 129, and has participated in varied activities during the past year. It has stressed periodic health examinations for its members by letters, followed by birthday greeting cards, "urging the necessity of an annual physical health examination." It has sponsored talks on the Cause and Cure of Cancer before groups of churches and other organizations. The Hospital Committee collected over 1200 selected books and more than 2000 magazines with which to start perpetual libraries in the hospitals and welfare organizations of Norfolk.

The outstanding accomplishment of this organization is the card party, which was sponsored for the purpose of raising funds with which to build a "Bed-Unit" in the Tidewater Victory Memorial Hospital. So enthusiastic was the response and cooperation of the general public to their appeal that the Auxiliary was unable to accommodate their guests with one party and it became necessary to divide into three sessions. The proceeds netted $1,610.70. An interesting coincidence of the party was the part played by the number "thirteen." The party was held on Friday 13th, was arranged by thirteen Committee Chair-

men, thirteen Captains and thirteen Lieutenants, and 1300 women played.

Mrs. W. P. McDowell, the retiring president of this Auxiliary, will be succeeded by Mrs. R. U. Burges.

Richmond Auxiliary.

The Woman's Auxiliary to the Richmond Academy of Medicine, of which Mrs. N. Thomas Ennett is president, is now showing more enthusiasm in its work than ever before and expects to accomplish much good in the future.

Recently, a fund has been created by the Auxiliary for the undernourished children in the public schools. On May 26th, a card party was given at the home of Mrs. J. Shelton Horsley for the benefit of the Children's Ward at Dooley Hospital. As we go to press, we understand that a large number of tables had been reserved.

The newly appointed Chairman of *Hygeia*, Mrs. O. C. Brunk, is cooperating with the National Chairman to increase the circulation of *Hygeia*.

The Truth About Medicine

In addition to the articles enumerated in our letter of March 28th, the following has been accepted:

Ciba Company, Inc.

Ampules Solution of Nupercaine—Ciba, 25 c.c., 1:1000:

NEW AND NON-OFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Non-official Remedies:

Refined and Concentrated Antipneumococcic Serum, Type I—Lederle.—An antipneumococcic serum (New and Non-official Remedies, 1930, p. 351), prepared by immunizing horses with intravenous injections of cultures of Type I and Type II pneumococci. When test bleedings show the serum to have reached a sufficient degree of potency for type I pneumococcus, the horses are bled aseptically, the serum is refined and concentrated by the method of Lloyd B. Felton. The finished product contains type II pneumococcus antibodies, but not in therapeutically important amounts. It is marketed in packages containing 10,000 and 20,000 units of type I pneumococcus. Lederle Laboratories, Inc., Pearl River, N. Y.

Pollen Extracts—Swan-Myers. The following pollen extracts—Swan-Myers (New and Non-official Remedies, 1930, p. 35), have been accepted: Mixed Grass Pollen Extract—Swan-Myers (Timothy, June Grass, Orchard Grass, Red Top and Sweet Vernal Grass in equal proportions); Russian Thistle Pollen Extract—Swan-Myers. Swan-Myers Company, Indianapolis, Ind. (Jour. A. M. A., April 18, 1931, p. 1307).

PROPAGANDA FOR REFORM

Annual Meeting of the Council on Pharmacy and Chemistry.—The Council held its twenty-seventh annual meeting on March 27th and 28th. Among the subjects considered, those of special interest to the medical profession were: It was decided to permit the advertising of products accepted for New and Non-official Remedies in professional journals intended for dentists, pharmacists, nurses and veterinarians, provided such advertising does not invite or encourage use by unqualified persons. The Council decided that the submitted evidence did not warrant recommendations for the use of gynergen in exophthalmic goiter. It was decided that ovary preparations, except those containing and standardized for the follicular hormone, be omitted from New and Non-official Remedies with the close of 1931 unless new and favorable evidence develops. The Council voted to include in New and Non-official Remedies a statement of the dosage of cod liver oil wh'ch shall be based on the opinions obtained from leading pediatricians. The Council approved a proposal that a joint committee of the Council and the Committee on Foods arrange for the publication of a series of articles on the present status of our knowledge of vitamins A, B, C and D. It was decided to invite manufacturers of cod liver oil preparations included in New and Non-official Remedies to propose a uniform method for the determination of vitamin A and vitamin D potency, which they would like to have the Council provisionally adopt. It was the general opinion of the Council that claims for the "anti-infective" value of vitamin A in colds and other infections, need further confirmation. The Council decided that the present evidence for the value of copper-iron therapy in the treatment of anemias is insufficient. (Jour. A. M. A., April 18, 1931, p. 1306).

Book Announcements

Quacks. By CHARLES W. WARNER. Jackson, Mississippi. 1930. 12mo. of 206 pages. Cloth. Price, $1.00.

This book is dedicated to man's best friend—the family doctor. It is written by a detail man with thirty years' experience and is an expose of various cults and creeds.

Heart Disease. By PAUL DUDLEY WHITE, M. D., Instructor in Medicine, Harvard Medical School; Physician, Massachusetts General Hospital, Boston. New York. The Macmillan Company. Octavo of 931 pages. 119 illustrations. Cloth. Price, $12.00.

Treatment of Injury by the General Practitioner. By CLAY RAY MURRAY, M. D., F. A. C. S. Assistant Professor of Surgery, College of Physicians and Surgeons, Columbia University; Associate Visiting Surgeon, Presbyterian Hospital in the City of New York. In Two Volumes. Harper's Medical Monographs. Harper & Brothers. New York and London. 1931. Volume I—12mo. of 208-xv pages with 196 Drawings by the Author. Volume II—12mo. of 412-vi pages with 196 Drawings by the Author. Leatherette. Price, $5.00 for the two volumes.

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Editorial

Post-Graduate Study.

Post-Graduate education is a foremost need of present day medicine. Of course, it has always been equally important as now, but emphasis fortunately has been more recently laid on this need in modern medical practice. This emphasis has been brought out because it has become more and more apparent that intensive training given in a four- or five-year term at the Medical School cannot answer requirements of educational qualifications needed in medical practice during succeeding decades. There are many reasons for this; two contrary forces at work may be given: the great volume of new work in medical research and improvements in medical practice of the past two or three decades crowd and fill modern days with medical advances unknown in college days; the busy practitioner of the second and third decades of practice, unconsciously influenced by the urge of the immediate duty of practice is prone to neglect the needed study of the advances of modern medicine and the needed review of fundamentals. It is the effect of these opposing forces, at least in a measure, that brings about the need, so apparent today, of continued post-graduate medical study on the part of medical practitioners.

In Virginia, a real effort has been begun, under the patronage of the Medical Society of Virginia and its component societies, to carry forward a system that tends to encourage post-graduate study. In fact the movement on the part of the Medical Society of Virginia was begun some years ago but it has, within the past few years, taken on the proportions of a substantial department of the Society. It is needless to point out the large advantages that accrue to members of the profession through the national, state, and county medical societies. One would feel hopelessly impotent in medical practice but for the varied and innumerable advantages that these organizations are constantly throwing around one. It is needless to speak of the negative and positive forces that organized medicine in this and all the other states of the Union throws around the public and the active practitioner alike. These are obvious, but it is important that members of the society appreciate and utilize this newer agency that is for the advancement of medical efficiency. Post-graduate study, of course, cannot be conducted in its complete sense by the medical Society of any state, but it is through such a central organization that it can be encouraged and fostered and operated at least in an important degree.

The medical men of this state are, therefore, again urged to read with interest and care the Department of Post-Graduate Clinical Education in this journal and to give every effort to support the system by attending the sessions of clinical and medical meetings. One may urge as a preparation for attendance upon such meetings or clinics, where the program is published beforehand, to attempt a sort of cursory study of the anatomy and physiology of the subjects to be discussed at the meeting. In every medical library, no matter how limited it may be, one may find much of in-

terest touching upon the physiology and pathology of the problems to be considered at the clinics.

But most important of all is to set aside a time for attendance and thus to encourage in every way possible the President and President-Elect and other members of the central organization of the State Medical Society in their effort to carry on a state-wide program of post-graduate clinical education for all Virginia practitioners.

Functional Albuminuria.

Albuminuria to the practitioner has been ever important.

For decades the urine examination, disclosing the presence of albumin has meant, ordinarily, some sort of kidney pathology. Such significance partook of nephritis of one sort or another. It has been known, however, that there have been cases of urine examination showing albumin, in which it was doubtful that true nephritis existed. Functional orthostatic, postural or transient albuminuria were some of the terms that have been employed in designating this group of patients.

In the light of the frequency of albuminuria as a finding in examination of patients, a consideration of the subject of so-called functional albuminuria is timely and interesting. Palmer* has presented a resumé of the subject and our readers who desire to review this general subject should read this article.

Correctness of diagnosis, a more accurate prognosis, and a more reasonable line of therapy hang upon the proper understanding of the significance of albuminuria.

In order to develop material in this study Palmer* undertook a consideration of 174 cases showing albuminuria in routine examinations. These subjects showed no abnormalities of physical examinations. The blood pressures were normal, none exceeding 140 systolic. This group was classified as functional intermittent, postural or orthostatic albuminurias. One hundred and sixty-four (164) had been examined for the first time ten or more years before and ten had been examined for the first time nine years before. To this group 147 normal subjects examined approximately ten years before were compared. A review of the data and tables indicates that infectious disease was not a factor in the etiology of functional albuminuria.

*J. A. M. A. Vol. 96. No. 19. Page 1559.

However, the large percentage of underweight patients seemed to point to this as a factor, but with certain reservations. That lumbar lordosis is a frequent cause was not borne out by this study. It was interesting to note that functional albuminuria tended to clear up after eight years without symptoms of abnormalities of kidneys appearing. It was interesting furthermore to observe that without such abnormalities the functional albuminuria appeared to be unimportant. It was pointed out that slight traces of albuminuria in young male adults without other signs of renal disease is of comparatively little significance, persistent in only one of thirty-five cases, after eight years. It was further shown that the most constant factors in association with it were underweight and vascular disease in family history; it was noted that poor posture had no meaning in this series; it was thought that the pathogenesis was of local nature, or possibly resulting from stasis producing local acidosis.

Peripheral Vascular Disease.

Studies on occlusive disease of peripheral circulation offer opportunity for important knowledge in a field that has been late in receiving attention. The fine arterial distribution in the extremities, it must be recalled, largely simulates in general the minute arterial blood supply of organs as well and it is not too much, possibly, to think that there may be no little similarity of action, from a general cause, in the coats of arteries in any location in the body. In other words, one may reasonably think that investigations throwing light upon the behavior of circulation in the digits having vasculo-disease may be of interest in organs of the body such as the heart, liver, kidneys and brain, having a similar state of vascular disease. One then may read with interest the note of preliminary work done by Taylor on transillumination of digits in peripheral vascular disease as reported in *Proceedings of the Staff Meetings of the Mayo Clinic*, March 4th, 1931. He observed that in certain cases of occlusive arterial disease of the extremities, the digits were more opaque to transillumination than normal digits. He undertook some observations. He placed the patients in a semi-dark room and the extremity was elevated approximately 60 degrees from the horizontal. Active and passive motion and light massage emptied the

superficial veins of the part. A flashlight was then applied to the plantar and palmar surfaces of the distal phalanges of the digits and observations were made from the opposite side. The same observation was made after the extremity had been allowed to hang down for one to two minutes. Twenty-five normal persons were examined in this manner as a control. Eleven cases of occlusive arterial disease of the extremities showed increased opacity, arbitrarily graded on a basis of 1 to 4; this was found either on dependency only or on both elevation and dependency.

Associated Pathology in Hyperthyroidism.

Pathology, disclosed at the post-mortem table, that links up changes of tissue with a previous clinical course of disease, must ever offer interesting phenomena to the practitioner. So it is with a study by Lewis* of twelve necropsies on patients who suffered from hyperthyroidism. They were patients observed between 1923 and 1930—marking the period of iodin therapy in thyroid disease. In regard to observations upon the general pathology in hyperthyroidism, brought out prior to this time, Lewis notes the work of a number of pathologists. This antedated the study of basal metabolism in connection with the thyroid activity. He particularly called attention to the pathology of the thyroid gland itself as described and worked out by Marine. All of this investigation bears particularly on the thyroid but it was the purpose of Lewis to report observations made upon hyperthyroid cases as related to pathology outside of the gland. Of the twelve cases studied three died without operation. Anatomic changes in the heart and blood vessels were mainly sclerosis of the coronary arteries, and general arteriosclerosis but this was compatible with the age of the patient. There were no significant anatomic changes in the spleen, liver, kidneys pancreas, adrenals or ovaries.

Lewis was of the opinion that hyperthyroidism by itself has no toxic influence or direct pathologic action on the heart, but indirectly accelerates development and progress of pathologic lesions from other sources by causing increased work.

*J. A. M. Sc. January, 1931. Page 65.

Narcotic Drugs in Use Today.

Medical practitioners must ever find a keen interest in any discussion that throws light upon the advances, uses, and indications, as well as control, restriction and even prohibition of narcotic drugs. A nation-wide aggitation of the mis-uses of narcotic drugs in present day society is entirely proper insofar as such discussion may bring about a reasonable and proper use of these remedies in conditions of human pain and distress. It cannot be gainsaid that a large mis-use of narcotics is widespread in the land. Much harm and distress is being brought about through their lamentable mis-use. At the same time, the significant and worthy application of these remedies, under careful and responsible medical care and control, brings to suffering man-kind much succor and relief from pain. In this service to humanity is to be found one of the high offices of the medical practitioner.

Practitioners may, however, revise and review their knowledge of this broad and urgent question by following with thought and care the course of articles that have appeared and are to appear in the *Journal of the American Medical Association** on this subject.

Readers may note the subject to be discussed and thereby note the scope and importance of these discussions. The indispensable use of narcotics in surgery, in medicine, in obstetrics, in gynecology, in therapy generally, in local anesthesia, in cough remedies, in gastrointestinal diseases and in psychotherapy, are among the subjects. Besides one may note a paper on the abuse of narcotics; on narcotics in proprietary medicines, on legal aspects of the use of narcotics; and on the chemistry of barbital substitutes for narcotics. From this catalogue of subjects one may readily form a revised opinion of the present day needs of narcotics, as well as note the trend that such drugs are taking as a menace in modern life in this country.

(See *J. A. M. A.* March 14, 1931. Page 856. The Indispensable Uses of Narcotics.

Presidents' Message

Virginia's Temples of Health.

The above caption is in no sense a fanciful figure of speech. Instead, it is descriptive and interpretative, and summarizes in brief the fruition of all the aims and activities of all Virginia hospitals, both public and private, that maintain their institutions for the Health of the People. The public, and even some of the profession have been slow to realize the great work of these institutions, numbering nearly one hundred in Virginia, or adequately appreciate their continuing service for science and for the Commonwealth. It is probable that their private work in many instances, and in others, the supposed financial returns accruing, especially, to a small percentage of physicians, have been the probable causes of the non-recognition of their service, but these cannot be true, for no Hospital that gives proper service to its patrons has seldom earned a profit.

The cause lies deeper, and is based on the old-age doctrine of a false education that does not appreciate fully what is given wholly in the true spirit of scientific service.

The public has always had Hospitals and has quietly accepted their services, but has little noted the benefits so generously bestowed, nor long remembered them, for their existence was only to be expected, and their services only to be utilized, sometimes, perhaps in a reciprocal mood, and at others, in a purely selfish manner. Fortunately, a better spirit has prevailed, and always should, between referring physicians and attending Hospital Staffs, for their aims are identical and beget mutual confidence and respect, and thus only, can science and professional interests be conserved and advanced.

The truth is that Hospitals, both public and private, as developed and maintained at present, are not usually money-making institutions but are the crowning achievements of scientific applied medicine. In their laboratories, the most notable discoveries of medicine and surgery have been made, and in their wards, the theories as to the treatment of disease and the methods for disease-prevention have been applied, and their value proved by human test on a large scale—and thus patients have been the gainers, while our Commonwealth has been benefited by the saving of human life and the making in many instances of producers out of consumers. The total of suffering relieved, of life prolonged and salvaged, and of disease thus prevented, is almost incalculable, and each day adds to this long roll of distinguished scientific service for humanity.

It was in a Hospital that Harvey, the Father of Modern Medicine, demonstrated by his ingenious and daring experiments that the blood circulates, incomparably "the most important discovery ever made in physiological science," and one hundred years later in a Hospital, Hunter did for Surgery what Harvey had done for Medicine, and became the Father of Modern Surgery, and this same inquiring spirit of scientific research still persists in our present-day Hospitals, and not only animates the attending Staffs, but stimulates the general practitioner and specialist without their walls, to aid by their experience and skill in the wise solution of the numerous and many-sided problems of modern medicine that constantly arise.

The spirit of scientific endeavor and research is unselfish, and if the public could be aware of its existence and continuing interest, it would be far more appreciative, and must less critical. Less, also, would be heard from the public of "the high cost of sickness," and still less of the inefficiency of medical method of practice. Proper knowledge would show that the investigation into the high and increasing cost of sickness was undertaken by the physicians themselves for the benefit of their patients, and that even at present, the total sum expended annually in the United States for sickness of every kind is less than the amount paid during the same period for cigarettes, about which nothing is said, and furthermore, that the average income of doctors in this country is only about four thousand dollars, or a little less annually. In addition, it might be noted that frequently patients, themselves, add to Hospital costs by demanding unusual, and often unnecessary, luxuries in their treatment.

It is true that the complete diagnosis of any case of sickness, either within or out of a Hospital is expensive these days, but this is true

only because of it thoroughness and extent, a thing impossible in the days when the present scientific methods were unavailable, because unknown, and yet, such an end, like everything else worth having, is expensive, and must be paid for. The results of examination even now are not always definite, yet generally, they are much more exact and conclusive than formerly, and are consequently much more valuable to the patients in speeding recoveries, and equally so for their subsequent guidance by the physician.

It is not claimed that Hospitals or Hospital Staffs are immune to constructive criticism any more than the general practitioners of Medicine, their allies, but the spirit that dominates them all is the same—an unselfish scientific spirit that energizes the hand, the heart and the head, and makes fruitful medical service to human-kind.

These thoughts about Virginia's Temples of Health are written at no one's request or suggestion, but by one who has known something personally of the benefits rendered, as well as the spirit that almost universally animates these workers in their chosen field of service.

This is a noble work—it is as valuable as it is inspiring—for whatever is discovered, is put into practice for the benefit of all the people the world over.

"Physical fitness for the whole nation" was the goal of ancient Greece, and it was that ideal that was established and honored in those marvellous old Temples of Health, some of which stand today for our admiration and emulation.

The Hospitals of today, the cradles of medical science and teaching, have inherited this old tradition, and have performed many medical and surgical miracles in prolonging life, due to the unselfish labors of scientific research that knows neither barriers nor boundaries, as well as to the devoted service of physicians in the field, the wards, the laboratories and the surgical amphitheatres of our Hospitals.

In private practice, general practitioners gain much knowledge of value in the study of individual cases, and add much to the sum-total of medical learning, and it is regrettable that more numerous reports are not made of their experiences, but their special province is the application in practice of special knowledge for the benefit of their patients. It is, however, in the routine practice in the Hospitals, where all the necessary factors are assembled, that the physician gains the most comprehensive knowledge and varied experience, for a continuous succession of many different types of cases and patients provides a wealth of clinical material for study and practice that cannot otherwise be easily obtained.

Efficient teaching and research Hospitals, especially those whose staffs are composed of physicians whose methods are faithful and tireless in truth-seeking by experiment and investigation, are an asset of untold value to a State and, according to the measure of their efficiency, will be the efficiency of our doctors and nurses who will pass on today and in the future the lessons learned, and thus in time disease may be routed, and "health become the normal lot of man."

Every orderly hospital where the team-work is well regulated without the sacrifice of personal relations between the patient and his physician is more or less a center for teaching, and the larger the hospital, the greater the opportunity. A few of our hospitals are now doing research work of scientific value, and while this is a rather new departure for us, even our State University not having had professorships for specific research work for more than five years, yet this trend is most commendable.

It is needless to emphasize that in the association of these workers, in order to get best results, the strictest courtesy and cooperation between general practitioners and hospital staffs must be maintained and reciprocated, as well as a most scrupulous regard for the highest ethical tendencies in connection with routine hospital service and scientific research inquiry, whether personal or professional.

Neither the alchemy nor the system of scientific healing can be standardized, and because of this, a fertile and inviting field will always be open for seekers after the truths of science, and this will lead to further developments, and a spirit of group service among workers who share ideals in common.

It is only in comparatively recent years that the immense economic value of health and its necessity for the welfare and happiness of the race has been recognized, and this may add to and hasten the fulfillment of this prophetic statement, for "nothing is impossible to science that properly falls within its sphere," nor to

the infinite resources of modern medicine pursuing the progressive methods of scientific healing.

Already, science has marvellously increased our knowledge of disease-prevention, as well as our power to fight and conquer disease, and it is confidently believed that the unselfish labors of the research service of our physicians and Hospitals, as well as the scientific studies and experiments carried on by the large and well endowed bureaus of many research Foundations, will progressively teach all the people till their imagination shall rise to grasp the purpose and common object for which these Temples of Health have been and are being established and maintained, namely, the relief of suffering humanity, and the prevention and cure of disease.

J. Allison Hodges, M. D.,
President, Medical Society of Virginia.

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

Post-Graduate Medical Education.

Post-Graduate Medical Education conducted under the auspices of the two state medical schools in cooperation with the Clinical Department of the Medical Society of Virginia has, we believe, become an established institution. As might have been expected, the physicians in some communities have responded more promptly and with more enthusiasm than those in other sections of the state. However, there has been a real awakening on the part of physicians and laymen to the importance of continued education and the necessity of keeping abreast of the times—learning the new things in medicine, and discarding old ways and methods that have been found inadequate and unscientific.

The medical schools have naturally been the leaders in this form of education. The clinics conducted for some years at the University of Virginia and at Richmond by the two state medical schools have attracted many physicians and serve as the most striking examples of post-graduate medical education in our state.

We wish to direct special attention to "Post-Graduate Medical Education in Virginia" appearing in the April number of the *University of Virginia Record Extension Series.* This is a very interesting and instructive discussion on post-graduate medical education in this country and includes what has been done and is being done in this state, and also gives an account of the growth and extension of post-graduate clinical education in other states covering a period from 1916 in North Carolina interrupted by the World War and resumed in 1922. It also contains a discussion and comparison of the various plans of instruction followed in thirteen states of the Union. The essential features of five of the programs are arranged for comparison on a chart; these include the New York plan, Michigan plan, Wisconsin plan, North Carolina plan, and the Brooklyn plan. The details of these plans will not be given here, but it is hoped that many of those interested in this subject will secure copies and read the whole report. Quoting from "Summary and Conclusions"—

"The profession and the public are coming to realize that medical science is unbreakably linked with medical education—The profession of medicine is rooted in medical education and will not rise higher than the soil in which it grows."

The term post-graduate education is taking on the element of time as well as intensiveness. Continuous study, not for the purpose of specialization but for the purpose of keeping pace with the progress of medicine, is the new conception of post-graduate education for the benefit of the practicing physician. The organized profession of medicine has recognized and accepted the responsibility to its members and the public. It has been well written by Dr. Chas. A. Gordon, a conspicious leader of the movement in Brooklyn and in the State of New York: "Medical education is not a purely medical problem. Every one has a right to participate in the dividends of modern medicine; consequently the public looks to us. The steadily increasing group consciousness of organized medicine, and its growing desire to as-

sume leadership in the solution of the great problems of public health, fix on us a very definite responsibility. In the continuous education of the practicing physician we see the greatest single contribution that organized medicine can make, and responsibility rests not on the medical college but on us."

I. C. Harrison, M. D., *Chairman, President-Elect, Medical Society of Virginia.*

Schedule Meetings

The St. Philip Hospital Post-Graduate Clinic, Medical College of Virginia, Richmond, Virginia.

Date.—June 15-27, 1931.

Purpose and Scope.—To give intensive instruction for a two weeks' period to Negro physicians, primarily of Virginia, in the fields of medicine, pediatrics, obstetrics, and surgery, as related to general practice. There will be lectures, demonstration of cases, and assignment of cases for study on the wards of the St. Philip Hospital. There will also be laboratory assignments daily. Saturday morning will be left opeu to cover the special problems of the physicians registered for the course. At this time certain of their own more difficult cases will be brought in for study and discussion. One public lecture during each week of the course will be given at night.

The faculty will be composed of the regular staff of the Medical College of Virginia, except the two special lecturers who will come from Howard University.

The Medical College of Virginia is to be commended and congratulated for affording this apportunity to the Negro physicians of the state.

The Norfolk County Medical Society Programs for June Meetings are given below. Any member of the State Society is invited:

Monday, 8th June—Section on Surgery:
Case Reports by a number of members.

Monday, 15th June—Section on Medicine:
Eczematoid Ringworm of Hands and Feet, Dr. Jas. W. Anderson.
Present Status of Pellagra, Dr. F. C. Rinker.
Serum Treatment of Poliomyelitis, Dr. Claiborne Willcox.

Monday, 22nd June—Section on Obstetrics:
Management of the Occipito-Posterior Position, Dr. Chas. W. Doughtie.
Uterine Tumors Complicating Pregnancy and Labor, Dr. Thos. M. Vorbrinck.
Anatomy of the Uterine Pelvic Support, Dr. John W. Winston.

This will close the activities of the Society until 1st October.

Dr. Douglas VanderHoof, of Richmond, delivered a very much appreciated address on the Microcytic Anemias on the evening of Monday, 18th May, before the Norfolk County Medical Society. There was a large attendance of the members and much interest was manifested in the discussion of this growingly important theme.

The Southside Virginia Medical Association, of which Dr. Ruth Mason, Petersburg, is president, and Dr. R. L. Raiford, Franklin, secretary, will hold its regular quarterly meeting in South Hill, Va., Tuesday, June 9th. Members of the State Society are invited to this meeting.

News Notes

Hotel Accomodations for Our State Medical Meeting.

All members of the Medical Society of Virginia who plan to attend the convention to be held in Roanoke, October 6th-8th inclusive, are urged to get their hotel reservations at least a month in advance.

Roanoke's hotel facilities will be more limited this year than in the past due to the destruction of the Ponce de Leon and the rebuilding of one wing of Hotel Roanoke.

The official headquarters for the sixty-second annual meeting will be the Hotel Patrick Henry. It is believed that between the Patrick Henry and the Hotel Roanoke all who are wise enough to make early reservations will be taken care of.

To alleviate the crowded conditions and also to cut the hotel expense it has been suggested by the management of the Patrick Henry for as many doctors as possible to double up, two in a room which would be equipped with twin beds, in this way participating in the double occupancy rate.

Rates at Hotel Patrick Henry (400 rooms)

Rooms equipped with one bed, to be occupied by two persons—$5.00, $6.00, $7.00 and $8 00 per day.

Rooms equipped with twin beds, to be occupied by two persons—$5.00, $6.00, $7.00 and $8.00 per day.

Rooms equipped with one bed, to be occupied by one person—$2.50, $3.00, $4.00, $5.00 and $6.00 per day.

Rates at Hotel Roanoke

Single room with bath—$2.50 to $5.00
Double room with bath—$4.00 to $8 00
Single room without bath—$1.50 to $2.00
Double room without bath—$3.50

A list of rooms in private homes, convenient to the Patrick Henry Hotel, may be had by writing to Dr. H. H. Trout, General Chairman of the Committee on Arrangements, and this list will also be on file at the Information Bureau at the time of the Meeting.

The Mid-Tidewater Medical Society

Held its regular quarterly meeting at Saluda, Va., April 28th, with Dr. William R. Gwathmey, of Ruark, presiding. At the morning session routine business was finished and a few cases reported. Dr. J. Allison Hodges, president of the Medical Society of Virginia and Dr. R. D. Bates, councilor from the First District, presented some matters of general interest concerning medical matters in the state. Following dinner at Bristow Hotel, at which the Middlesex doctors were hosts, the Society went into its afternoon session. Papers were presented by Dr. A. I. Dodson and Dr. Guy Horsley, both of Richmond, presented papers which were interesting and instructive, many practical points being emphasized.

Dr. Hodges concluded the program with some remarks on the status of the medical societies, their work and other features which the Society has recently undertaken. Some of the plans for the State meeting at Roanoke were given. These should prove of interest and benefit to physicians in the rural sections of Virginia as a portion of the program will be given over to the general practitioners and their problems.

The next meeting of this Society will be held in July at Gloucester, Va.

The Virginia Society of Otolaryngology and Ophthalmology

Held its twelfth annual meeting in Richmond, Va., on May 2nd, with a very interesting program. Following the scientific papers, the following officers were elected for the ensuing year: President, Dr. Clarence Porter Jones, Newport News; vice-president, Dr. Courtney Edmond, Clifton Forge; secretary-treasurer, Dr. H. Grant Preston (re-elected), Harrisonburg. Drs. H. B. Stone, Roanoke, Frank Hanger, Staunton, and Fletcher Woodward, University, compose the executive committee. Dr. Beverley R. Kennon, Norfolk, was elected to membership. It was decided to hold the next meeting in Norfolk, in the Spring of 1932.

Virginia Public Health Association.

Dr. P. M. Chichester, of Clarendon, Va., was elected president of the Virginia Public Health Association at its annual meeting on May 14th. He succeeds Dr. B. B. Bagby, director of the State Bureau of Child Health. Dr. J. J. McCormick, public health officer of Norfolk, was elected vice-president, and Dr. A. L. McLean, director of the Henrico health unit, was elected secretary-treasurer.

There were several interesting talks on public health subjects given at the afternoon session. The main subject for discussion was "The Failing School Child as an Economic Problem."

University of Virginia, Department of Medicine, News.

Dr. Tiffany J. Williams, for the past two years obstetrician and gynecologist at the Great Falls Clinic, Great Falls, Mont., has been appointed Professor of Obstetrics to succeed Dr. Francis Bayard Carter who goes to Duke University as Professor of Obstetrics. Dr. Williams received his M. D. degree from Johns Hopkins University in 1923. He served for one year in the Johns Hopkins Hospital; one year in the Sloan Maternity Hospital, New York; one year in the Yale Medical School and Hospital, and three years in the department of Obstetrics and Gynecology at the University of Iowa Medical School.

Dr. H. J. Conn, Chairman of the Commission on the Standardization of Biological Stains, and Director of the New York State Agricultural Experiment Station at Geneva, N. Y., visited the Medical School on April 14th.

Dr. Fred C. Zapffe, Secretary-Treasurer of the Association of American Medical Colleges, spent April 16th and 17th at the University.

Dr. H. L. Higgins, Professor of Pediatrics at the Massachusetts General Hospital, Boston, Mass., visited the Medical School on April 20th.

Dr. James R. Cash, since 1924 Professor of Pathology at the Peiping Union Medical College in China, has been appointed to the Walter Reed professorship of Pathology, succeeding the late Dr. Harry T. Marshall, as the second incumbent of this chair. Dr. Cash received his A. M. degree from the University of Virginia ('15) and his M. D. degree from Johns Hopkins ('19). For five years following graduation he was connected with the Department of Pathology of Johns Hopkins University.

Dr. William A. White, Superintendent of St. Elizabeth's Hospital at Washington, delivered the address at the annual initiation ceremonies of the Honor Medical Society, Alpha Omega Alpha, on April 24th. He spoke on "Psychological Medicine a Necessity." Dr. William Root, of Slatersville, N. Y., founder of the Society, was present for the occasion.

Dr. J. C. Simpson, Professor of Histology and Embryology at McGill University, Montreal, Canada, and Assistant Dean of the Medical School, visited the University on April 25th.

The fifth Graduate Clinic, conducted by members of the Medical Staff, was held on April 30th and May 1st.

Dr. Lawrence T. Royster, Professor of Pediatrics, gave the principal address at the Duke University Medical School on the occasion of the installation of a Chapter of Alpha Omega Alpha on April 29th.

Four members of the Medical Staff attended the meetings of the Clinch Valley Medical Society at Lebanon, Va., on April 25th. Dr. William H. Goodwin spoke on "Surgical Lesions of the Mammary Gland," Dr. Francis Bayard Carter on "Management of Occiput Posterior Presentation," Dr. Henry B. Mulholland on "Diabetes Mellitus," and Dr. William W. Waddell on "Childhood Tuberculosis."

At the meeting of the University of Virginia Medical Society on April 20th, Dr. Royster spoke on "Congenital Syphilis," Dr. W. W. Waddell gave a "Review of the Pediatric Service for 1930," and Dr. Antonio Gentile presented the results of his research on "Cholecystogastrostomy."

Dr. J. Edwin Wood attended the recent meetings at Atlantic City of the American Society of Clinical Investigation and the Association of American Physicians. On May 5th he spoke before the Association on "Heart Block."

Dr. H. E. Jordan attended the meetings of the National Academy of Sciences and the National Research Council (Medical Division) held in Washington from April 27th to 30th.

Dr. Paul D. White of the Massachusetts General Hospital, Boston, Mass., and Dr. C. Sydney Burwell, Professor of Medicine at the Vanderbilt University Medical School, visited our Medical School on May 7th.

The Commencement Exercises of the Graduating Class of the University of Virginia Hospital School for Nurses were held on May 7th. The class numbered thirty. Dr. Kenneth F. Maxcy delivered the address.

Dr. Henry B. Mulholland and Dr. J. Edwin Wood attended the meetings of the American Clinical and Climatological Association at Hot Springs, Va., on May 8th.

Dr. Rufus I. Cole of the Rockefeller Institute of Medical Research in New York City visited the Medical School on May 12th.

Medical College of Virginia News.

April just past was the busiest April in the history of the outpatient clinics of the Medical College of Virginia; during the month there was 3,799 patient visits for treatment at the clinics.

A total of 380 obstetrical cases have passed through the pre-natal clinic maintained as a unit of the outpatient department of the Medical College of Virginia since last July 1st. These cases have all been delivered either in the homes of the patients or in the hospitals of the college with no maternal deaths resulting.

Dr. J. L. McElroy, superintendent of the Medical College of Virginia hospitals, the Memorial, the Dooley, and the St. Philip, will be one of a small group representing the American Hospital Association at the second International Hospital Congress at Vienna, Austria, which will be in session from June 6 to 14, 1931. Dr. McElroy sailed on the LaFayette with his family on May 21st.

Colonel William L. Keller, Medical Corps, U. S. Army, Chief of the Surgical service at Walter Reed General Hospital, Washington, D. C., will be the recipient of the honorary degree of Doctor of Science at the Commencement exercises of the College, closing the ninety-third session of the institution on Tuesday, June 2nd, just as this journal is going in

the mail. Dr. Keller is an alumnus of the College.

Sight-Saving Classes.

The National Society for the Prevention of Blindness announces that four universities will offer courses for the training of teachers and supervisors of sight-saving classes this summer, as follows:

Tulane University, New Orleans, La., June 15th to July 24th;

University of Chicago, June 22nd to July 24th;

State Teachers College, Buffalo, N. Y., June 29th to August 7th;

Teachers College, Columbia University, N. Y., July 6th to August 14th.

Explaining the necessity for more teachers and supervisors of sight-saving classes, Mrs. Winifred Hathaway, associate director said: "Between 50,000 and 60,000 school children in the United States have such seriously defective vision as to require special educational methods and special eye care. The recent White House Conference on Child Health and Protection recommended the establishment of sight-saving classes as the best method of educating these pupils.

"At present, there are fewer than 400 sight-saving classes in the United States. Inasmuch as the National Society for the Prevention of Blindness estimates that at least 5,000 classes will be needed to provide facilities for educating all visually handicapped children, it may readily be seen how widespread is the need for qualified teachers and supervisors.

"In sight-saving classes, through the use of special large type books, movable desks, ideal lighting, and special teaching methods, children with little vision are not only given the same sort of education that children with full vision receive, but they are also taught how to conserve their remaining sight. Educators have found that many children who had been accounted stupid or sullen displayed excellent intelligence and pleasing dispositions as soon as their defective vision was recognized and they were placed in sight-saving classes."

Dr. Frank Coulson Pinkerton,

Of the class of '28, University of Virginia, Department of Medicine, and recently located at University, Va., has located at Pinehurst, N. C., where he is engaged in the general practice of medicine.

Dr. Joseph H. Smith,

An alumnus of the University of Virginia, formerly of Edwight, W. Va., recently completed a course at the New York Lying-In Hospital, and has located in Farmville, Va., for the practice of obstetrics and pediatrics.

Dental Clinic for Stockholm.

George Eastman, of Kodak fame, has recently contributed $1,000,000 to establish a dental clinic in Stockholm, Sweden. This clinic, says the *Journal of the American Medical Association*, will include a school for dental hygienists similar to that in the Rochester, N. Y., dental dispensary. Other dental clinics have been instituted through Mr. Eastman in London, Paris, and Rome.

Dr. L. H. Bracey,

South Hill, Va., has been elected one of the directors of the Rotary Club of that place.

Married.

Dr. Howard Lyle Mitchell and Miss Dora Wisborne Witt, both of Lexington, Va., March 14th.

Dr. G. A. L. Kolmer, Salem, Va., and Miss Emma Cameron Cook, Roanoke, Va., April 8th.

The American Gynecological Association,

At its meeting in May at Hot Springs, Va., under the presidency of Dr. William P. Graves, of Boston, Mass., elected Dr. George Gellhorn, St. Louis, Mo., president, and Dr. Otto Schwarz, also of St. Louis, secretary. The Council will later decide upon date and place of the 1932 meeting.

Dr. William T. Burch,

Alexandria, Va., has recently returned from Vienna where he took a six months' course in Otolaryngology at the University of Vienna.

The American Proctologic Society

Has arranged an interesting program for its meeting in Philadelphia, June 7th, 8th, and 9th, under the presidency of Dr. Dudley Smith, of San Francisco. Dr. Curtice Rosser, Dallas, Texas, is secretary. There is a registration fee of $5.00 for those who attend the sessions. By invitation, Mr. J. P. Lockhart Mummery, of London, England, an honorary fellow of the Society, will deliver a series of addresses, and Dr. Fred W. Rankin, Rochester, Minn., an honorary associate of the Society, will give an address.

One of our Virginia doctors, Dr. E. H. Terrell, Richmond, is on the program for a

paper on "Selecting the Treatment for Hemorrhoids."

1930 the Best Health Year.

Measles, scarlet fever, whooping cough, and diphtheria are being rapidly conquered, according to a report in the recent *Statistical Bulletin of the Metropolitan Life Insurance Co.* The combined death rate among the company's policyholders for these four diseases was 26 per cent lower in 1930 than in 1929. The reduction in the diphtheria rate alone was considerably greater.

Dr. J. Hugh Bailey,

Formerly of Danville, Va., after sometime spent in Montana, has returned to Virginia, and has located at Scottsburg, Va., where he will practice general medicine.

Dr. Edward C. Joyner,

Of the class of '28, Medical College of Virginia and editor of *Skull and Bones* while at college, was recently appointed city physician of Suffolk, Va., in which place he has been practicing since leaving the North Carolina Baptist Hospital at Winston-Salem, N. C., a year ago.

Civil Service Positions.

The U. S. Civil Service Commission, Washington, D. C., announces open competitive examinations for the following positions, applications to be rated as received until June 30, 1931: Medical officer, associate medical officer and assistant medical officer in general medicine and surgery; chief nurse and head nurse in the Indian Service and graduate nurse and graduate nurse, visiting duty, in the various Services; social worker (psychiatric) and junior social worker.

Full information may be obtained from the above named Commission or from the Secretary of the U. S. Civil Service Board of Examiners at the postoffice or customhouse in any city.

Dr. John Cecil White,

Of the class of '27, Medical College of Virginia, who has been associated for several years with the Doctors Blanton, in Richmond, Va., has just located in Blackstone, Va., where he will be engaged in general practice.

Eye Defects in Kindergarten Children.

Eye defects were found in about one-fifth of approximately 1,000 Brooklyn and Manhattan kindergarten and day-nursery children who were examined by eye specialists. This proportion is almost as large as that of children with eye defects in older age groups, says the National Society for the Prevention of Blindness, which conducted the study. The findings, however, yielded some indications that the vision of children between the ages of three and six years tends to improve during the process of growth, training and development. The girls of this pre-school group had slightly poorer vision than the boys.

The Medical Society of the State of North Carolina

Had a most excellent meeting in Durham, N. C., the latter part of April, coincident with the formal opening of Duke University in that place. The program included several prominent guest speakers in addition to papers by members. The president, Dr. J. G. Murphy, of Wilmington, presided. Winston-Salem was selected for the 1932 place of meeting. Dr. M. L. Stevens, Asheville, succeeded to the presidency, and Dr. John B. Wright, Raleigh, was made president-elect. Dr. L. B. McBrayer, Southern Pines, was re-elected secretary-treasurer.

New York Alumni Association of Medical College of Virginia.

At the meeting of the Association, on May 25th, Dr. Russell L. Cecil, formerly of Richmond, Va., gave an interesting talk on "Being Bacteriologically Minded." Introductory remarks were made by another former Virginian, Hon. Hugh Gordon Miller, now Special Assistant to Attorney-General of the United States. Supper followed the meeting. Dr. M. Benmosche, of the class of 1904, Medical College of Virginia, presided. Dr. Patrick M. Carroll, of the class of 1916, is secretary-treasurer of the organization.

An interesting feature of the May *Bulletin* of the Association was an original poem by Dr. Benmosche, entitled "Our Teachers."

Appointed State Health Officer of North Carolina.

Dr. William P. Jacocks, formerly of North Carolina but recently serving under the Rockefeller Foundation in medical work in India, is reported to have accepted an appointment as State Health Officer of North Carolina.

American Medical Association.

It is hoped many Virginia doctors can arrange to attend the meeting of the A. M. A., in Philadelphia, June 8th-12th. It is an inspiration to be one of the large number to attend these annual sessions and the local committee has made extensive preparations for the com-

fort and pleasure of those attending. All sections will be held under one roof. Special parking and other privileges will be extended motorists who secure credentials from the Physicians' Motor Club at the time of registration at the annual session.

Virginia will be represented in the House of Delegates by her regularly appointed delegates—Drs. Southgate Leigh, J. W. Preston and E. C. S. Taliaferro, all of whom have signified their intentions to attend. It may be years before the A. M. A. meets so near Virginia again, so plan to attend this meeting if possible.

Doctors as Nursing School Teachers.

According to a report made from records of 1,379 nursing schools by the Committee on the Grading of Nursing Schools, more than 16,500 physicians lecture to student nurses or act as instructors in the schools of nursing. Numerically, they form one of the largest groups to come in contact with student nurses as teachers.

The largest groups of schools have from six to fifteen physicians on the teaching staffs; eighty-two schools have eight; eighty-one have ten; eighty-four have thirteen; eighty-one have fifteen. The range is from one to fifty physicians per school.

About 3 per cent, or 522 of the physicians who teach are paid for their services. Three or five dollars for a lecture is the most common rate. In a Maryland school, for example, two of the twenty-one physicians listed as instructors received pay, $50 and $40, for the term. In some cases the fee is considerable, one Boston physician receiving $2,000 a year for his lectures.

Dr. Carl C. Cooley,

Of the class of '29, University of Virginia, Department of Medicine, after being stationed for a time in Norfolk, Va., has been transferred to the U. S. Marine Hospital, Ellis Island, N. Y.

Dr. Edwards Given Promotion.

Dr. Charles M. Edwards, Richmond, Va., has been promoted from the grade of major to that of lieutenant-colonel, Medical Reserves, U. S. Army, effective May 7th.

Great Britain's Low Death Rates.

The British Registrar-General reports that provisional figures for 1930 indicate an infant mortality rate of 60 per 1,000 live births, the lowest ever recorded for England and Wales. This is 5 points below the previous minimum, recorded for 1928, and 14 points below the rate for 1929. The general death rate also was the lowest on record. The birth rate remained the same as for 1929—16.3 per 1,000 population—the lowest recorded.

No-Child Marriages in Cities as Compared With the Country.

According to data from the federal census made public by the Milbank Memorial Fund, birth control or decreased fecundity, or both, is responsible for nearly twice as many childless families in cities as compared with country districts. This striking difference in the number of no-child marriages was revealed in a study of the original enumeration schedules for 69,620 married women of native-white parentage, taken from the 1910 census. Among women forty to forty-nine years of age, 16 per cent of those living in cities were childless, as compared with 9 per cent of those living in the country. The urban samples were selected from the thirty-three northern cities of 100,000 to 500,000 population, and the rural samples, from seventy-four counties neighboring the cities.

Childless marriages were found to be two and one-half times as common among professional people in the cities as among farm laborers. In the city groups, 18 per cent of the wives of professional men were childless, as were 16 per cent of the wives of business men, 15 per cent of the wives of skilled workers, and 14 per cent of the wives of unskilled workers. Among the rural groups, 10 per cent of the wives of farm owners and 7 per cent of the wives of farm renters and of farm laborers, were without offspring.

Whether this greater frequency of no-child families among urban married couples, and especially among the "upper" classes, represents choice or sterility or both, is not apparent from the data analyzed. However, it is suggested by collateral evidence that, because of the greater expense of having children in cities and in view of the higher standards of living of the professional classes, birth control is practiced to a greater extent among the so-called "upper" classes.

Dr. John W. Robertson,

Onancock, Va., after an illness since the latter part of February, with influenza and complications, expected to resume his professional work early in June.

Dr. Manfred Call, III,

Has returned to his work at Wesley Memorial Hospital, Chicago, after a visit of several weeks to his parents, Dr. and Mrs. Manfred Call, Richmond. Dr. Call graduated from the University of Virginia, Department of Medicine, last year, at which time he received an eighteen months' appointment to the Wesley Hospital. Upon completion of his service, next March, he will return to Richmond and be associated in practice with his father.

Dr. E. E. Walker,

Pamplin, Va., has been spending sometime with relatives at South Hill, Va., recuperating from a recent illness.

Dr. Karl S. Blackwell,

Richmond, Va., has been named president of the metropolitan board of the Young Men's Christian Association of Richmond, Va.

Dr. George D. Pettit,

Of the class of '29, Medical College of Virginia, after completing his internship at the Johnston Memorial Hospital, Abingdon, Va., has located for general practice at Chilhowie, Va.

Meeting Called Off.

On account of the death of Drs. R. C. Lynch, of New Orleans, and J. A. Stucky, Lexington, Ky., prominent specialists, who were killed in an automobile accident on their way to the meeting, the session of eye, ear, nose, and throat specialists which was to have met in Bowling Green, Ky., on May 13th, was called off. Dr. Lynch was to have been the honor guest at this meeting.

Virginia State Dental Association.

The following new officers were elected at the recent meeting of the Virginia State Dental Association, held at Old Point Comfort, in May: President, Dr. W. H. Street, Richmond; secretary-treasurer, Dr. A. M. Wash, Richmond, re-elected; executive council, Drs. T. W. Wood, Richmond, W. E. Miller, Norfolk, R. H. Phipps, Marion, and S. D. Kent, Danville. The association recommended Dr. E. F. Hodges Petersburg, and Dr. R. F. Simmons, Norfolk, to the governor for appointment to the state board of examiners.

The association will meet next year with the West Virginia Association at Winchester, Va.

Why Children Have Nervous Breakdowns.

Parents and parental attitudes are the main causes of the nervous breakdowns of adolescents, says Dr. George K. Pratt of the National Committee for Mental Hygiene in the *Parents' Magazine* for March. Everyone nowadays is picking on the parent. Dr. Pratt, however, acknowledges that the recognition of the symptoms of the "teen-age" breakdowns and taking the necessary steps to prevent them are no easy matters. Perhaps it may surprise those who are shocked at the so-called revolt of youth, that the writer considers this a rare symptom of breakdown, but that he is inclined to place at the head of the list over conscientiousness and extremely model behavior.

A Reviewer's Opinion on "Medicine in Virginia in the Seventeenth Century."

The Journal of the American Medical Association for May 2nd, in a review on "History of Medicine in Virginia in the Seventeenth Century," prepared by the Committee on History of Medicine in Virginia, Dr. Wyndham B. Blanton, chairman, states: "The volume reveals much intensive research into early medical practice . . . and will be found one of the most readable, well written accounts of the early history of medicine in the United States available."

If you have not secured a copy of this book, write the VIRGINIA MEDICAL MONTHLY about it as it would prove an interesting and valuable addition to your library.

Officers of Winchester Hospital.

Dr. Hunter H. McGuire was re-elected president of the Winchester Memorial Hospital, Winchester, Va., for the thirtieth consecutive term, at the meeting on May 16th. Dr. McGuire has held this position since the institution was opened in 1901. Dr. J. E. Harris was re-elected secretary.

Crippled Children in Michigan.

Available records of crippled children in Michigan indicate a much greater proportion of them in the population than the general estimate of 3 per 1,000. In Tuscola County, where an actual count was made, the proportion (including posture cases) was found to be 9 per 1,000. Infantile paralysis was responsible for one-third to two-thirds of the seriously handicapped children who came to the clinics in this county. Bone tuberculosis, rickets, motor accidents, congenital deformities, and industrial accidents were other important causes.

Third Pan-American Medical Congress.

Attention is again called to the Pan-Ameri-

can Medical Congress to be held in the City of Mexico from July 26th to 31st inclusive, under the auspices of the Department of Public Health of the Government of the United States of Mexico. Further information may be obtained from Dr. Francisco de P. Miranda, Secretary of the Congress, Departamento de Salubridad, Mexico, D. F.

Important Notice.

The Post-Graduate Course of Ear, Nose and Throat Surgery at the University of Bordeaux, France, will commence July 27, 1931.

The course is given in the English language. The class is limited to twelve physicians and is offered by Prof. George Portmann.

For information apply to Dr. Leon Felderman, 413 Mitten Building, Philadelphia, Pa.

Heads State Lions Club.

The Lions Club of Virginia, at its annual meeting in Danville, the middle of May, elected Dr. E. G. Gill, of Roanoke, district governor.

Dr. R. Angus Nichols, Jr.,

Has returned to Richmond, Va., after spending four and a quarter years at the New York Post-Graduate Hospital. His offices are located in the West End Medical Building. He will limit his practice to surgery.

Dr. O. Noel Morison,

Of the class of '28, University of Virginia Department of Medicine, at the completion of a year's fellowship at the Chicago Institute for Juvenile Research, was promoted April 1, 1931, to the position of psychiatrist upon its psychiatric staff. During his fellowship he received training in criminology at the Joliet, Ill., State Penitentiary and other State correctional institutions, in psychoneuroses and early psychoses at Michael Reese Hospital, and in child guidance work at the Institute for Juvenile Research and its allied clinics throughout the State. Prior to entering upon work at the Institute, Dr. Morison had approximately two years' training at the reception service of the Binghamton (N. Y.) State Hospital. On July 1, 1931, he will begin two years of neurological training at the Neurological Institute of New York.

Memorial to Dr. Murat Willis.

A special feature of the annual meeting of the Ex-Interns' Association of Johnston-Willis Hospital, Richmond, Va., on May 2nd, was the unveiling of a tablet to the memory of Dr. Achille Murat Willis, co-founder with Dr. George Ben Johnston of the Johnston-Willis Hospital. Former interns and a number of guests witnessed the ceremony.

Dr. W. F. Mitchell,

New Castle, Va., recently had the misfortune to break his right arm.

Dr. Kenneth Bradford

Has resumed his practice in Staunton, Va., after an extended rest in Florida.

Dr. A. M. Showalter,

Christiansburg, Va., underwent an operation for appendicitis early in May.

American Medical Golfing Association Tournament.

The Seventeenth Annual Tournament of the American Medical Golfing Association will be held in Philadelphia, Monday, June 8th, at the Aronimink Golf Club instead of the Huntingdon Valley Country Club, as announced in the Brochure of the Association which was recently mailed to members. The Aronimink Golf Club is modern; the course is in splendid condition and is interesting and sporty. The Local Committee is doing everything possible to make the tournament a great success. The Philadelphia men composing the Local Committee on Arrangements are Dr. John W. Croskey, Chairman; Dr. Willis F. Manges, Dr. Fred H. Leavitt, Dr. Frank J. Kelly, and Dr. Damon B. Pfeiffer.

Membership in the American Medical Golfing Association is open to any male Fellow of the American Medical Association in good standing. It is hoped that many of the medical golfers throughout this State will join the Association this year and take part in the Philadelphia tournament. There will be many attractive and valuable prizes awarded at the Annual Dinner, to be held on the evening of the day of the tournament at the Club House. For any additional information, communicate with any member of the Local Committee, or with the Executive Office, 1124 Macabees Bldg., Detroit, Mich.

A Correction.

Attention is called to a correction to be made in the article on "Milk Protein Therapy in Eye Disease" by Dr. H. W. Carter, of Washington, N. C., which appeared in the March issue of the MONTHLY. On page 802, first column, third paragraph from bottom, the statement is made that "Vistosan is produced in the chemical laboratory, 'Alemania,'

in Berlin-Wilmersdorf." The distributors in this country ask us to say that "Vistosan is produced by Troponwerke (Dinklage & Co.) Koln Muhlheim, Germany."

Dr. Benjamin L. Hume,

Recently of Huntington, W. Va., has located at Nokesville, Va., where he will be engaged in general practice. Dr. Hume is an alumnus of the Medical College of Virginia.

Slight Improvement Reported in Dr. Williams' Condition.

As we go to press, we are glad to report that a slight improvement has been noted in the condition of Dr. Ennion G. Williams, State Health Commissioner, who has been critically ill at his home in Richmond.

Dr. and Mrs. Charles W. Putney,

Staunton, Va., sailed on May 30th, for Europe, where Dr. Putney will take a post-graduate course at the University of Vienna. Before returning, they will visit Berlin, Prague, Munich, Zurich, Berne, Paris, and London.

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Wants Position—

Experienced technician desires position in hospital. References. Address Miss Hilda Zimmerman, Salem, Va. (*Adv.*)

Obituary Record

Dr. Joseph Nicholson Barney, Jr.,

Of Fredericksburg, Va., died in the Walter Reed Hospital, Washington, on April 30th, after having been in ill health for several years. He was born in Powhatan County, Va., in 1867. Dr. Barney graduated from the Medical College of Virginia in 1893. After graduating, he practiced for a short while at Woodstock, later returning to his home in Fredericksburg where he took a position as head of the department of science of the old Fredericksburg College. Dr. Barney had been for the past twenty years city health officer of Fredericksburg; he was a member and past master of the Fredericksburg Masonic Lodge, a member of the Elks, of which he was exalted ruler last year; and was also connected with many other civic and fraternal organizations. He was in active service during the World War. Dr. Barney had been a member of the Medical Society of Virginia for thirty-five years and was for a number of years a member of the State Board of Medical Examiners from the First District. His wife and two children survive him.

Dr. William E. Warren,

Williamston, N. C., beloved as doctor and citizen, died of pneumonia, April 5th, aged 61 years. He was a prominent member of his State, the Tri-State and Seaboard Medical Societies. He was for some time health officer of Martin County, N. C.

Dr. Robert Maitland Ellyson

Died at his home in Washington, D. C., May 10th, after an illness of about two weeks. He was seventy years of age and graduated from the George Washington University Medical School in 1888. Dr. Ellyson was a native of Petersburg, Va.

Dr. George Martin Kober,

Emeritus dean and emeritus professor of hygiene at Georgetown University School of Medicine, Washington, D. C., died at his home in that city on April 24th. He was born in Germany but came to this country in 1866, when only sixteen years of age. He graduated in medicine from Georgetown University in 1873. He had held many positions of importance and continued his interest in medical matters to the end, though he retired from active work several years ago.

Dr. William Hamilton Dulaney,

Perhaps the oldest physician in Virginia, died at his home in Lynchburg, Va., March 9th, death being due to cerebral hemorrhage. He was 94 years of age and graduated in medicine from the University of Maryland School of Medicine, Baltimore, in 1859, and was in the Confederate service in the War Between the States. He was at one time a member of the City Council of Lynchburg.

Dr. J. Emmett Sebrell,

Charlotte, N. C., died April 4th, at the age of 69 years. Death was due to coronary occlusion. Dr. Sebrell graduated from the Medical College of Virginia, Richmond, in 1882.

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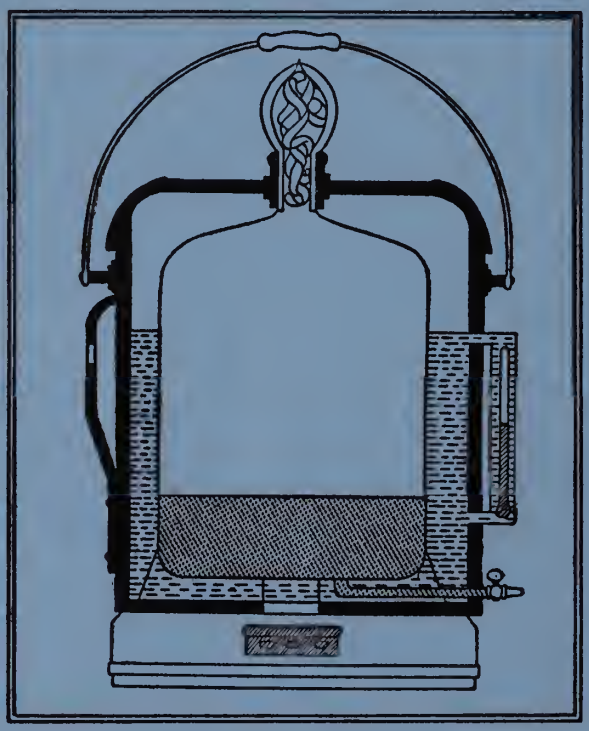

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RICHMOND, VA., JULY, 1931

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SYPHILITIC CARDIOVASCULAR DISEASE—A PRELIMINARY REPORT.*

By WILLIAM B. PORTER, M. D.,
and
DUDLEY C. ASHTON, M. D.,
Richmond, Va.

We have selected for this study 505 patients admitted to various services of the Hospital Division of the Medical College of Virginia from July 1, 1927, to July 1, 1930, who showed complete complement fixation reaction for syphilis. The object has been to include in this study only those patients whose blood indicated active syphilitic disease. For this reason, patients showing weakly or doubtfully positive Wassermann reactions were excluded, and this method of selection largely eliminated patients who had been subjected to intensive antiluetic therapy.

A spirochetal bacteriemia occurs at some period after the initial lesion of syphilis. Colonization of the spirocheta pallida in various areas of the body begins early and almost at once the bacteriemia disappears leaving behind widely disseminated focal areas of active syphilitic disease. The lesions produced by syphilis in the cardiovascular system represent one of the most unfortunate and serious results of this parasitic colonization. The "so-called" latent syphilitic lesions of the somatic structures are characterized by periarteriolar and pericapillary infiltration of round and plasma cells with the later addition of fibroblastic elements. This lesion, a miliary gumma, undergoes central necrosis, the result of ischemia induced by the obliteration of the lumen of involved vessels through proliferation of the endothelial lining, pressure necrosis of the vessel wall and probably to some extent the effects of spirochetal antigen on local elements. The miliary gumma is the unit of syphilitic pathology wherever found just as the tubercle is the unit of the pathology induced by the tubercle bacillus. One may say, therefore, that the perivascular gumma is, regardless of its location, the lesion of late syphilis, and from a clinical standpint, cardiovascular syphilis is concerned principally with the heart and that part of the vascular tree, the walls of which are nourished by specially designed vessels, the vasa vasorum.

An analysis of those patients presenting symptoms sufficiently characteristic to be classed as having syphilitic cardiovascular disease, revealed the presence of phenomena localizing the pathology above the diaphragm in 88 per cent of the cases, the exceptions being an abdominal aortic aneurysm and two aneurysms of the popliteal artery. One is chiefly concerned, therefore, with the changes occurring at the base of the aorta and contiguous structures, viz., coronary vessels, aortic ring and leaflets, and cardiac musculature. Fundamentally, the lesions in the aorta characteristic of this type of vascular disease consist primarily of an involvement of the nutrient vessels of the muscular and elastic coats with anemic necrosis and fragmentation of these which results in a loss of elasticity and tensile strength of the vessel wall with a consequent saccular or diffuse dilatation of the aorta. The changes observed in the intima and adventitia are secondary to the mesaortitis, representing a compensatory adjustment and hyperplasia, a protective gesture of nature to strengthen a weakened vessel wall. This characteristic behavior of the vessel, to dilate as the result of the destruction of the elastic coats, explains most of the phenomena characteristic of syphilitic aortitis. Dilatation of the base produces the phenomenon, aortic regurgitation, and aneurysms are the end results of saccular dilatation of the vessel wall.

The effects upon the heart muscle are the results of involvement of mouths of the coronary vessels in the syphilitic process and the development of aortic regurgitation with its consequent effect in prompting immense cardiac hypertrophy. At the same time there is

*From the Department of Medicine, Medical College of Virginia. Read by Dr. Ashton at the sixty-first annual meeting of the Medical Society of Virginia, in Norfolk, October 21-23, 1930.

interference with the dynamics of coronary circulation due to the low diastolic pressure. Also there probably exist certain rare cases of diffuse spirochetal involvement of the muscle mass.

Table I is a summary of the material reviewed. In a period of three years (July 1, 1927, to July 1, 1930) there were admitted to the Hospitals of the Medical College of Virginia 505 patients with strongly positive Wassermann reactions. Of this number, 100 cases were found to have cardiovascular disease.

TABLE No. 1

Total Number of Cases With Strongly Positive (4+) Wassermann Reactions, 505

Positive Cardiovascular Disease	85
Suspected Cardiovascular Disease	15
Classification of Cases	
Aortitis with Insufficiency	16
Aortitis without Insufficiency	3
Aneurysms	4
Rheumatic Heart Disease	7
Thyrotoxicosis	2
Arteriosclerotic, Hypertensive	58
Subacute Bacterial Endocarditis	2
Pericarditis—Purulent and Serofibrinous	4
Unclassified	4
Total Number of Cases	100
Percentage of Cardiovascular Cases with Syphilitic Cardiovascular Disease	23.
Percentage of all Cases with Syphilitic Cardiovascular Disease	4.5

Twenty-three patients presented signs and symptoms of cardiovascular syphilis, and in two cases slight manifestations of this disease were discovered at autopsy.

As may be readily seen the arteriosclerotic-hypertensive group was the most prevalent, the syphilitic group next, and the rheumatic group third. Pericarditis, bacterial endocarditis, and thyrotoxicosis occurred in only a few cases.

The usual diagnostic procedures were employed in differentiating the various types, free use being made of the electrocardiograph, X-ray, and polygraph. Most of the patients were under observation for sufficiently long periods to make the diagnosis relatively certain. For the purposes of this study we shall discuss only those cases of aortitis and aneurysm. We believe that the positive Wassermann reactions in the other types of cardiovascular disease were coincidental and had no etiologic bearing.

Table II contains a brief synopsis of certain essential features occurring in sixteen patients with syphilitic aortic insufficiency. The blood pressure changes conform in general to what one would expect in aortic regurgitation. The diastolic pressures were low in comparison to

TABLE No. 2

Patients With Syphilitic Aortic Insufficiency With Strongly Positive (4+) Wassermann Reactions

No.	Name	Age	Sex	Race	B. P.	Type of Dyspnea	Rhythm	Congestive Failure	Anginoid Symptoms	Result
1.....	M. C.	40	F	W	125–0	Constant	Normal	Yes	No	Improved
2.....	G. M.	33	M	N	230–70	Paroxysmal Nocturnal	Normal	Yes	Yes	Improved
3.....	F. C.	33	M	N	140–70	Paroxysmal Nocturnal	Normal	Yes	No	Died
4.....	J. B. J.	54	M	N	198–100	Paroxysmal Nocturnal	Extrasystoles	Yes	No	Improved
5.....	C. T.	31	F	N	195–35	Paroxysmal Nocturnal	Normal	Yes	Yes	Improved
6.....	S. G.	60	M	W	120–18	Paroxysmal Nocturnal	Normal	Yes	Yes	Died
7.....	G. M. G.	38	M	N	185–40	Constant	Normal	Yes	Yes	Died
8.....	E. D.	42	F	N	120–40	Constant	Normal	No	Yes	Improved
9.....	J. G.	49	M	N	160–60	Constant	Normal	Yes	Yes	Died
10.....	W. D. A.	45	M	W	180–84	Constant	Normal	No	Yes	Improved
11.....	E. C.	46	M	N	150–70	Constant	Normal	Yes	Yes	Improved
12.....	J. E.	42	M	N	190–0	Constant	Normal	Yes	Yes	Improved
13.....	M. C.	30	F	N	190–70	Paroxysmal Nocturnal	Normal	Yes	Yes	Improved
14.....	G. L.	31	M	N	130–20	Constant	Normal	Yes	Yes	Improved
15.....	E. B.	28	M	N	140–80	Paroxysmal Nocturnal	Normal	No	Yes	Improved
16.....	D. K.	40	F	W	118–48	Paroxysmal Nocturnal	Normal	Yes	Yes	Died

Summary

White, 25%, Negro, 75%; Males, 68.7%, Females, 31.3%.
Paroxysmal Dyspnea, 50%; Anginoid Symptoms, 81.2%; Congestive Failure, 81.2%.

the systolic and in practically every instance there was an increase in the "pulse pressure." Paroxysmal dyspnea, normal rhythm, and congestive failure were frequent concomitants.

The majority of the patients showed improvement while in the hospital, but judging from past experiences, it is probable that the remissions were only temporary.

Table III included three cases of aortitis without insufficiency, and, in addition, four other cases in which the mesarteritis had progressed to aneurysmal dilatation. In the first group the signs of aortic insufficiency were not present but all the other signs and symptoms were fairly typical of aortitis without regurgitation. The aneurysms occurred in the ascending aorta, the abdominal aorta, and in two instances in the popliteal artery. The two patients with aortic aneursym died, both apparently as the result of rupture of the sac. In the popliteal cases there was recovery following amputation which was necessary because of gangrene in the involved legs.

Table IV gives a brief summary of two patients in whom aortitis was discovered at necropsy. In both cases the involvement was slight, due in all probability to an arrest of the process early in the disease. As far as could be determined it had no important bearing on the ultimate result.

The average age of all the patients with cardiovascular syphilis was forty-one years. This gives us no definite clue as to when the disease began, but the striking thing is that the large majority were definitely incapacitated before or just at the middle age period of life. The fact that practically all of these patients were deprived of economic usefulness before the prime of life is one of the lamentable sidelights on this type of disease.

Normal rhythm was present in all but two cases, and in these the arrhythmias were due to premature ventricular contractions. When one considers the relative frequency of rhythmic disturbances in rheumatic and arteriosclerotic types of heart disease, it seems significant that in cardiovascular syphilis the pace maker and conduction systems are relatively undisturbed even in advanced congestive failure.

The phenomenon, paroxysmal dyspnea, was quite prevalent in our series, occurring in eight (50 per cent) of the cases of aortic insufficiency and in all three cases classed as aortitis. The mechanism of production of this

TABLE No. 3

Aortitis Without Insufficiency In Patients With Strongly Positive Wassermann Reactions

Name	Age	Race	Sex	B. P.	Type of Dyspnea	Rhythm	Congestive Failure	Result
H. H....	37	N	M	128–110	Paroxysmal Nocturnal	Normal	Yes	Improved
R. R....	45	N	M	180–90	Paroxysmal Nocturnal, with Pain	Extrasystoles	Yes	Improved
T. A....	38	N	M	180–100	Paroxysmal Nocturnal, with Pain	Normal	Yes	Improved

Aneurysms In Patients With Strongly Positive Wassermann Reactions

Name	Age	Race	Sex	B. P.	Location of of Aneurysm	Cardiac Symptoms	Cardiac Signs	Rhythm	Result	Autopsy
W. P.....	42	N	M	190–130	Ascending Aorta	Constant Dyspnea, Pain, Hoarseness	Cardiac Enlargement, Pulsating Tumor in Precordial Region	Normal	Died	No
P. H.....	48	N	M	160–110	Abdominal	Slight Dyspnea	Slight Enlargement	Normal	Died	Syphilitic Arteritis
G. H.....	49	N	M	110–80	Popliteal	None	Heart Enlarged	Normal	Imp.	Pathological Report
W. J.....	40	N	M	260–150	Popliteal	None	Heart Enlarged	Normal	Imp.	Pathological Report

unique type of respiratory difficulty is still not clear. Longcope,[1] who reported the existence of nine cases in a total of sixty-three patients with syphilitic aortitis, was inclined first to the theory of bronchospasm initiated by an aortic-bronchial reflex. Lamb[2] reported twenty-six cases of simple aortitis without insufficiency in which paroxysmal dyspnea was not present. Keefer and Resnik[3] fonnd it to occur in a large percentage of cases with aortic insufficiency, but not at all in cases of uncomplicated aortitis. Palmer and White[4] describe its relatively frequent occurrence in syphilitic aortic insufficiency, but also refer to the finding of variable degrees of cardiac asthma, in hypertensive arteriosclerotic heart disease, and coronary sclerosis. It would seem, according to these authors, that the occurrence of dyspnea, paroxysmal in type, was in some way connected with advanced degrees of left ventricular failure, inasmuch as this feature was almost universally present. This symptom in our cases may be explained on the same basis.

Cardiac pain, anginoid in character, was a prominent feature of the symptom complex, occurring in thirteen of the sixteen patients with aortic insufficiency, in two of the three cases of aortitis without insufficiency, and in the patient with aneurysm of the ascending aorta. Here again the explanation is fraught with controversy. Whether it is the result of inflammatory lesions in the aorta producing referred or reflex pain, or due to distention of the ventricular chamber, is a mooted point. Longcope found evidences of definite coronary obstruction in numerous cases without anginal symptoms, and it would seem that the cause of cardiac pain is still largely undetermined. However, the persistence of low diastolic pressure coupled with an obstruction to coronary blood flow as the result of aortic lesions would seem to produce varying degrees of myocardial anoxemia with pain as a possible result.

Congestive failure is a relatively late manifestation of aortic disease for the reason that the powerful musculature of the left ventricle is able to withstand marked increases in stress and strain without becoming incompetent. When the break in compensation occurs, therefore, it is usually significant of severe myocardial damage, and consequently, the restoration of compensation is a much more difficult problem. Thirteen of our patients with aortic insufficiency and three with aortitis presented signs of congestive failure, and analysis of the histories reveal that practically all had experienced symptoms of cardiac disease for several years before the break in compensation occurred. It may also be noted that once myocardial failure supervenes the general trend is for a downhill course although there may at times be short remissions.

TABLE No. 4

Aortitis Discovered at Post Mortem in Patients Dying of Other Types of Cardiovascular Disease

Name	Age	Sex	Race	Cause of Death	Rhythm	Autopsy
J. S.....	70	M	N	Arteriosclerosis Pyelonephritis Bronchopneumonia Myocardial Insufficiency	Normal	Slight Syphilitic Aortitis Arteriosclerosis Acute Pyelonephritis Aortic Valves Competent
C. M....	49	M	W	Bronchopneumonia Purulent Pericarditis	Normal	Slight Syphilitic Aortitis Bronchopneumonia Pericarditis Aortic Valves Competent

Bibliography

1. Syphilitic Aortitis: Its Diagnosis and Treatment. Warfield T. Longcope, M. D., New York. *Archives of Internal Medicine*, Vol. 2, January, 1913.
2. Lamb, A. R.: Syphilitic Aortitis and Aneurysm of the Aorta. Nelson Loose-Leaf Living Medicine. Vol. 4, p. 531. 1924.
3. Paroxysmal Dyspnea As a Symptom of Syphilitic Aortitis. C. S. Keefer, M D., W. B. Resnik, M. D., Baltimore, Md. *Arch. Int. Med.*, Vol. 4, p. 2. 1926.
4. The Clinical Significance of Cardiac Asthma. A Review of 250 Cases. Robert S. Palmer, M. D., Paul D. White, M. D., Boston. *J. A. M. A.*, February 9, 1929.

Discussion

Dr. William B. Porter, Richmond: There are certain phases of this study which are very interesting and instructive. There is, however, a very apparent and distressing situation existing in this field of cardiovascular disease. It is evident that the ravages of the spirocheta pallida in the aorta and that part of the vascular apparatus above the diaphragm do not evidence themselves until the disease is so advanced that it is classifiable as advanced in degree. It is comparable to the cavitation stage of

tuberculosis, and it is distressing that this should be true. The explanation for this situation is reasonable and plain. Syphilitic disease of the aorta is not painful until the pathology is advanced, nor are the symptoms of heart failure evidenced unless there is an associated hypertension of advanced heart muscle pathology. Aneurysms are frequently noted at the autopsy table without having been suspected during the patient's illness. At any rate it has been our experience to have the pathologist present us with this unsuspected lesion. There are several lessons to be learned from this study. For the time being it seems very difficult to make the diagnosis of cardiovascular syphilis until the disease has advanced beyond the stage when much may be accomplished by therapy.

Secondly, these patients die at a period when they are just beginning to be socially useful and economically productive.

Lastly, it behooves us therefore to consider carefully these facts and to concern ourselves with the study of the incipient phenomena and symptoms of this malady to the end that we may have a group of signs and symptoms which are comparable to those so well established in incipient tuberculosis. At this time we are far from this goal.

Dr. T. W. Murrell, Richmond: Dr. Porter asked me to say something about the therapy of syphilis in these and similar cases. It seems somewhat of a joke that he should ask me to do this.

A great deal is said about the age of the patient that has syphilis, and the essayist states that unfortunately he can give very little about the age of the disease. It seems to me that is a very important thing in our conception of how we are going to treat syphilitics, as to how long they have been syphilitics. The average age of these patients, as he gives it, is forty-one, but there are a good many over fifty and one aged seventy-one. Now, if you take the average age at which syphilis is contracted, it is usually between the age of twenty and thirty. This particular man had been a syphilitic for forty or forty-five years and had been a normal man for twenty-five or thirty years. Therefore, chronic parasitism has developed. Now, it is very important to give our students some criteria of what can be accomplished relative to the age of the infection. Obviously, you cannot go back and treat syphilis in this man. The heart is permanently damaged; the patient is permanently damaged. The best you can do, perhaps, is to relieve him of pain and perhaps give him a sense of well-being.

A prominent gynecologist came to Richmond a few years ago and in a short talk reviewed his history. He said women had come to him with their organs all misplaced, all out of position; that in his enthusiasm he had operated on them and replaced the organs in the proper position, but the patient never felt well again. He said: "Now I am laying great stress on the patient's sense of well-being" So if we can give these patients a sense of well-being it is a great thing to do. The average student wants to treat the patient with syphilis until we get a negative Wassermann, but we don't want to descend into the grave to do it.

Dr. F. C. Rinker, Norfolk: Any cardiovascular disturbance must recall to our attention the possibility of syphilis. Reverting from that to the question of syphilis, I am very definitely of one opinion; that is, when we have determined that cardiovascular disease is due to syphilis, it is first our job to relieve the patient, relieve his pain, relieve his dyspnea, and then start him on antisyphilitic treatment. As Dr. Murrell has so well brought out, we cannot hope in the majority of cases to get a negative Wassermann, but we can put him on his feet, so that he is a valuable citizen.

In closing, I want to say just this—I think the institution of treatment by the use of the arsenates; salvarsan, neosalvarsan, and the like, is dangerous. I think it is well to start with the mercury and iodides and later use the arsenates, because of the damage that results from the use of the arsenates in these cases on the cardiovascular system itself, where syphilis exists.

SODIUM AMYTAL AS A PRE-ANAESTHETIC AGENT—WITH ESPECIAL REFERENCE TO ITS USE IN ORTHOPEDIC SURGERY.

By THOMAS F. WHEELDON, M. D., F. A. C. S.,
and
FREDERICK PILCHER, Jr., M. D.,
Richmond, Va.

For years we have looked for an ideal anaesthetic: since the introduction of ether by Crawford W. Long, in 1842, of nitrous oxide by Horace Wells, in 1844, and chloroform by James Y. Simpson, in 1847. Every year one or more anaesthetics is introduced. We have sought an anaesthetic which would render the patient unconscious of his surroundings and yet not have the deleterious effect of ether on the respiratory system, of chloroform on the liver, or cocaine on the central nervous system. This ideal anaesthetic has not yet been found, but sodium amytal, supplemented when necessary with the usual anaesthetics, has seemed to us to be a definite step ahead toward this goal, and has, in addition to that, eliminated many of the disagreeable experiences of the surgical patient.

In 1903, Fisher and Von Mehring successfully completed the synthesis of a nitrogen containing compound prepared by treating diethylmalonic acid ester with urea and sodium ethylate. This preparation was placed on the market under the name of barbital.

Since that time a large number of barbital derivatives have been prepared, differing from one another largely in the substitution of one or both hydrogen atoms by other radicals. It is possible to develop a great number of the substances.

In 1924, Fredet and Perlais[1] succeeded in inducing general anaesthesia with the barbituric acid series. They used a mixture of diethylbarbituric acid and allylisopropyl barbituric acid, the trade name for which is somnifene. This was given intravenously. Fol-

lowing their lead, Bumm,[2] in 1927, used sodium butylbetabromopropenyl barbiturate intravenously. The trade name for this is pernokton.

In 1926, Page and Coryllos[3] used sodium amytal, the trade name for sodium iso-amyl-ethyl-barbiturate, intravenously to produce general anaesthesia in animals. These animals went to sleep quietly and slept from two to six hours. When they awoke they seemed fresh and showed no ill effects from the drug. A little later Page and Swanson[4] conducted a series of experiments which convinced them that amytal was less toxic than veronal.

In February, 1929, Zerfas and McCallum,[5] of the Medical Research Department of the Indianapolis City Hospital, successfully demonstrated the induction of surgical analgesia and anaesthesia in man by the intravenous injection of solutions of sodium amytal. They reported 300 cases. In September, 1929, Lundy,[6] of the Mayo Clinic, reported 1,000 cases, medical and surgical, in which this barbital derivative had been used. Since that time numerous articles have appeared in the literature concerning the use of this drug.

This report will deal chiefly with the use of sodium amytal by mouth. However, many of the observations reported here were made on patients who had been given the drug intravenously.[7]

Administration

The drug is supplied by the manufacturer in ampules of three sizes for intravenous use and in capsules of three grains each. At the writing of this paper the drug prepared for intravenous use has not been released on the market, so we will not discuss the technic or complications of administration by that route.

The usual precautions that are taken with general anaesthetics of any kind should be taken when this one is used. We have in every case given morphine and atropin, according to the age of the patient, one-half or one hour before operation. The use of morphine seems to render the action of amytal more uniform and more intense.

In very dilute solutions it may be given intramuscularly, or it may be given by mouth, rectum or intravenously.

We prefer to give the drug by mouth. As with many drugs, so it is true with this one, that there is a great variation in individual suspectibility. When given intravenously we have seen the dose required to put the patient to sleep vary from three to seventeen grains. The intravenous route without doubt affords the most accurate method of controlling dosage, since, when injected intravenously, the drug acts almost instantly. However, the oral method has certain advantages over the intravenous. To prepare and inject the drug requires not less than twenty minutes. The patient must be stuck with a needle, and that is a little disagreeable and the procedure may upset a nervous individual. When given by mouth the patient takes several blue capsules given by the nurse. He does not know what they are, neither does he care. The next thing he remembers is six to twelve hours later when the operation has been completed without his knowledge.

Dose

The lethal dose for man is unknown. In dogs, Page and Coryllos found the fatal dose to be approximately twice the dose necessary for general anaesthesia. When the drug was first used the attempt was made to produce surgical anaesthesia with sodium amytal alone. This is possible, but requires rather large doses. Lundy, of the Mayo Clinic, has several times used as much as forty-five grains intravenously with impunity. Good muscular relaxation was secured, but the patients slept thirty-six or forty-eight hours and remained drowsy for four or five days. It was difficult to nurse patients under such conditions, and the dangers of pulmonary complications were increased. Experience has taught us that it is better to secure hypnosis with sodium amytal and to supplement it with gas or ether until the desired degree of anaesthesia and muscular relaxation is secured than to produce complete anaesthesia by means of sodium amytal alone.

With this in mind, we have used sodium amytal in sixty orthopedic cases, about 90 per cent of which have received the drug by mouth. As has been stated before, there is a wide variation in individual susceptibility to the drug. However, we have found that the following doses are sufficient to put the average patient to sleep so that he cannot be aroused, or can be aroused only with difficulty. We give three grains by mouth the night before the operation. To young people between the ages of ten and twenty we give three grains by mouth at each of the three hours previous

to the operation or a total of nine grains. To small women we give nine grains. To small men and large women twelve grains, and to large men fifteen grains are given during the three hours previous to operation.

General Effect

The point of action is not definitely known, but it seems to be on the hypothalmic portion of the diencephalon. The patient drops off quietly into a deep sleep which so closely resembles normal sleep that one cannot tell the difference until he finds it difficult to wake the patient.

Its other principal effect on the central nervous system is the anticonvulsant action which is strongly exhibited when the drug is used in strychnine poisoning, tetanus, toxic reactions from novocain and cocain, and in other convulsive states.

The pupils become contracted and sometimes fixed.

With its intravenous use there is a sudden decrease in blood pressure, which very shortly returns to normal. The fall in blood pressure is anaphylactoid in origin and is more marked in patients with extreme hypertension. With oral administration this fall in blood pressure is not such a striking feature.

The pulse is usually increased.

Respiration is decreased in amplitude and the rate is variable but usually decreased. The color is good, but occasionally a slight cyanosis has been noticed. In large doses in dogs death is always due to respiratory failure.

Some report a lowering and others a raising of the blood sugar. However, there is no associated generalized inhibition of carbohydrate metabolism.[8]

The basal metabolic rate is slightly lowered.

The temperature is lowered, with a minimal level reached in three to four hours.

Smooth muscle is almost entirely uninfluenced.

Excretion is through the kidneys, and frequently repeated doses have been found to be without effect on these organs.

Patients' Attitude to the Drug

We continue to use this drug because of the gratitude expressed by the patients who have received it. What is a commonplace experience to us is an adventure of terrifying and surprising magnitude to a great many patients. The preparation of the patient for operation, the preliminary hypodermic, the change of body apparel, the ordeal of having to get on an uncomfortable carriage, go to the elevator, be transferred to the operating room, see the doctors and nurses in white, hear the rattle of instruments, have something tight dropped over the face, and then experience a sense of suffocation for a few minutes is something to be dreaded and remembered for a long time. Many patients fear the anaesthetic and the post-operative nausea and vomiting more than the operation itself. With the method of administration as outlined above, all these things happen without the knowledge of the patients. They sleep soundly the night before the operation and are awakened in the morning to take another blue capsule, after which they remember nothing until four to twelve hours after the operation. They are sound asleep when brought to the operating room, and usually wake soon after operation to take fluids, clear the throat, etc., but remain amnesic for a period of several hours, during which time they remember nothing. There is painless recovery with very little or no nausea and vomiting even after major procedures, and the memory is free of disagreeable impressions.

Supplementary Anaesthetics

The supplementary anaesthestic may be nitrous oxide, ethylene, ether, chloroform, local or spinal. With the inhalation anaesthetics, about half as much is required with sodium amytal as is usually required to produce the same degree of relaxation with the inhalation anaesthetic alone.

Indications

It is especially indicated in nervous, sensitive and apprehensive individuals, but has been used in all types of surgery, obstetrics and medicine. In our orthopedic work we have used it for every operation which requires hospitalization for as long as twenty-four hours. (See Chart).

Chart I

Operations Under Sodium Amytal

Whitman Reconstruction for Fracture of Hip	5
Open Reduction of Fracture	6
Closed Reduction of Fracture	6
Bone Graft	4
Plastic on Hand	5
Sequestrectomy	2
Removal Bunions	6
Hoke Subastragaloid Arthrodesis	5

Manipulation of Joints	4
Removal Exostoses	4
Osteotomy Femur	2
Application Plasters	4
Stabilization of Spine	1
Disarticulation of Hip	1
Arthroplasty	1
Excision Semilunar Cartilage	1
Excision Coccyx	1
Excision Bursa	1
Plastic on Nose	1
Osteotomy Humerus	1
Excision Head of Radius	1
Plastic for Dislocated Clavicle	1
Plastic for Recurrent Dislocation of Shoulder	1
	64

Contraindications

We feel that it should not be given to the very young or old and debilitated, or those with extreme hypotension or hypertension. However, we have given it to individuals of from four to eighty-three years of age and with blood pressure varying from 100 to 230.

If one fears that a drop in blood pressure may occur, which will have a harmful effect on the patient, then caffein and ephedrin may be given prior to the administration of sodium amytal.

It should not be given when there is a known definite idiosyncrasy to the barbiturates. One reason for giving a small dose the night before operation is to determine whether the patient has an idiosyncrasy to the drug.

It should not be given in the presence of respiratory infections, because of the depressing effect of the drug on respiration. However, we do not feel that the hypnotic doses are dangerous. It should not be given when oral surgery is done, because bleeding may occur and the blood enter the trachea while the patient is in an unconscious state. A most definite contraindication seems to us to be obstruction of the respiratory passages.

Untoward Effects

We have observed no untoward effects from the administration by mouth. All the patients have gone to sleep quietly.

On the table they usually take gas or ether without struggling. However, in our series three or four have been a little restless. Only one patient became cyanotic during the operation, but this was quickly recovered from.

Due to muscular relaxation of the pharynx there is some danger of the tongue falling back and producing respiratory obstruction and cyanosis. For this reason a nurse should watch the patient until he has partly reacted. One way to prevent swallowing the tongue is to keep the patient's head turned to one side. After operation they usually react quietly, but about 10 per cent are restless. A sixth or a quarter grain of morphine will usually quiet them.

While in the drowsy state voiding is more difficult, and it will be found that more frequent catheterizations are required.

The chief complications to be feared are pulmonary congestion, edema and pneumonia, which are a result of shallow respiration in a quiet individual. However, with the small doses by mouth we have not met with this complication. The prophylaxis for these respiratory complications are the inhalation of mixtures of carbon dioxide and oxygen, hypodermic injections of caffein and ephedrin, the frequent turning of the patient and encouraging him to take ten to twelve deep breaths at least once every hour.

If it is desired to have the patient react more quickly, caffein and ephedrin will be found effective.

In our series of orthopedic cases we have had no anaesthetic deaths, nor have we had any anxiety during the operation, except in the one case mentioned above where cyanosis occurred.

Conclusions

In orthopedic work we have found sodium amytal a very safe pre-anaesthetic agent. It allays the patient's fear of surgical procedures and decreases the amount of inhalation anaesthetic required. It is especially valuable when plaster jackets and plaster spica casts are applied, because the anaesthetic may be discontinued as soon as the operation is completed and the patient will remain quiet long enough for the plaster to set well.

Case Reports

1. D. H. J. (Case No. 14,410). A white girl, age twenty, had bunions of several years duration. Operation was performed on September 17, 1930. The night before operation three grains of sodium amytal were given by mouth. On the morning of operation she was given nine grains of sodium amytal by mouth and a hypodermic of ¼ grain morphine and 1/150 grain atropine. When brought to the operating room she was sound asleep. A very light gas anaesthetic was required to keep her quiet. She awoke six hours after operation,

but the following day recalled none of the events of the day of operation. There was no post-operative nausea or vomiting.

2. J. T. R. (Case No. 14,703). A white boy, sixteen years old, had a deformity of the nose following an injury several years ago. Operation was performed on December 18, 1930. The night before operation he was given three grains of sodium amytal by mouth. On morning of operation he had nine grains of sodium amytal by mouth and a hypodermic of ¼ grain morphine and 1/150 grain atropine. He was sound asleep when brought to the operating room. A very light ether anaesthesia was given to make sure that he would be quiet. He awoke five hours after the operation and asked when he was going to have his operation.

3. J. T. D. (Case No. 14,851). A white man, twenty-five years old, had a recent comminuted fracture of the middle third of the femur. Operation was performed on December 20, 1930. A Hoke traction splint was applied for skeletal traction with a Steinman nail through the condyles of the tibia. Two hours before the operation ¼ grain of morphine and 1/150 grain of atropine had been given. Just before the operation fifteen grains of sodium amytal were given intravenously. Novocain solution was used in the skin when the Steinman nail was placed. Just after this he became a little restless and nitrous oxide was given for five minutes. The plaster and splint were then applied without difficulty.

4. T. B. (Case No. 14,871). A white woman, twenty-six years old, fell from a building and sustained a comminuted fracture of the os calcis, impacted fracture of the neck of the femur and a fracture of both rami of the pubis on the right side. Fifteen grains of sodium amytal were given intravenously. The patient was so quiet and relaxed that the fragments of the pelvis could be reduced to better position and the plaster applied without additional anaesthetic.

5. D. W. J. (Case No. 13,928). A colored boy, fourteen years old, had had infantile paralysis with resulting deformities. On September 24, 1930, he had a bilateral Hoke subastragaloid arthrodesis performed. Nine grains of sodium amytal were given during the three hours previous to operation. About half an ounce of ether was used when the first skin incision was made. Thereafter, no further supplementary anaesthetic was required. On September 30, 1930, he had bilateral osteotomies—done to correct the knock knees. Again he had nine grains of sodium amytal by mouth and only half an ounce of ether was used.

BIBLIOGRAPHY

1. Fredet and Perlais: *Presse Med.*, 32:676, 1924.
2. Bumm, R.: *Deutsche Med. Wchnschr.*, 6:725, 1927.
3. Page, I. H., and Coryllos, P. J.: *J. Pharmacal and Exper. Therap.*, 27:189-200, 1926.
4. Page, I. H., and Swanson, E. E.: *J. Pharmacal and Exper. Therap.*, 31:1, 1927.
5. Zerfas, L. G., and McCallum, J. T. C.: *J. Indiana S. M. A.*, 22: February 15, 1929.
6. Lundy, J. S.: Proc. Staff Meet., Mayo Clinic, 4:1929.
7. Mason, J. Tate, *et al.*: *Am. J. Surg.*, 9:9, July, 1930.
8. Isenberger, R. M.: *Am. J. Surg.*, 9:35, July, 1930.

318 *West Franklin Street.*

THE IMPORTANCE OF PRE-NATAL AND POST-NATAL CARE.*

By GREER BAUGHMAN, M. D., F. A. C. S., Richmond, Va.

When we consider that one-third of the maternal deaths in the United States are caused by eclampsia (more accurately the toxemias associated with convulsions) and when we remember that eclampsia, except in very rare instances, is absolutely preventable and can be readily diagnosed usually some time before the convulsions occur, by such simple means as a history, symptoms, changes in the urine, and rise of blood pressure, the reason for contacting the pregnant woman with a doctor seems obvious.

If we recall that infection accounts for a third of the maternal deaths and is in direct proportion to the length of labor and to the frequency of vaginal examinations, the need for pre-natal care with a mapping out of the size of the pelvis along with the fit of the baby to that particular pelvis seems all the more obvious.

In the last third of maternal deaths are grouped chronic diseases such as tuberculosis, etc., that seem to be aggravated by pregnancy and such other troubles as hemorrhage. Undoubtedly, a careful examination of the pregnant woman would and does give us in most instances information that will lead to proper treatment of the disease or to interference with pregnancy that may prevent mother's death.

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If further arguments were needed to stress the importance of having the pregnant woman make contact with a doctor for pre-natal care, the babies that are born with syphilis to be a charge to the community, the idiots and subnormal infants due to a misfit between pelvis and baby, cry with hands extended to us for adequate pre-natal care.

The mere contact of the pregnant woman with the doctor may give her a false sense of security and for that reason do positive harm unless he really gives her pre-natal care when she comes.

That pre-natal care consists at the minimum of:

1. Taking a history, family, personal and obstetrical.
2. Measuring the pelvis either with a pelvimeter or with the trained hand making an internal examination, or with both associated with a speculum examination.
3. Taking blood for a Wassermann, taking smears from cervix and urethra for gonorrhea when necessary.
4. Physical examination, chest, heart, abdomen, etc., including patient's weight.
5. Mapping out the baby for position, size, fit of the presenting part, heart sounds. If foetus is too small, the size of the uterus can be determined.
6. Urinalysis, better a catheterized specimen to get rid of vaginal pus and albumen.
7. Giving advice about food, clothing, bowels, exercise, mental care, care of abdomen, teeth, breasts, instructions about her needs for delivery and a prognosis both as to herself and the baby.
8. Giving her literature and instructions about returning for further observation.
9. Directing treatment, diet, etc., for any departure from the normal.

While carrying out of the above minimum seems very simple to those of us who are living the lives of obstetricians, it may seem rather elaborate and time-consuming to the general practitioner. When a good technic for carrying out the above examination has been worked out it will take only a half hour.

In addition to pure curiosity to see how his own obstetric work has turned out, there are many other reasons to justify a post-natal examination and post-natal treatment.

While post-natal care begins immediately after the birth of the placenta and membranes, the post-natal care we are discussing is that attention a woman receives after her six weeks of returning to normal have been completed.

Manifestly that examination must be done by a doctor.

An examination of the woman and her baby six weeks after delivery is of importance not only to satisfy the curiosity of the doctor and to make his records complete but to protect him from unjust criticism from conditions that might arise in the future. The examination is important for the woman and the baby in order that a true picture of their condition may be arrived at and treatment instituted to return them both to normal if possible.

The women are apt to have subinvoluted uteri, retroflexed, retroverted uteri, relaxed uterine supports, infections and erosions of the cervix, relaxed perinei, and bladder supports, inflammatory processes in the tubes or abdominal cavity, relaxed abdominal muscles and fascia, poorly functioning breasts with cracked nipples, constipation, ptosis, broken arches of the feet, broken coccyx, strained sacro-iliac ligaments and many other troubles directly attributable to her pregnancy and delivery.

The babies may be poorly nourished, have inflamed navels or hernia, inflamed breasts, show irritation from head trauma, paralyses, etc.

The minimum requirements for post-natal examination are:

1. History of the delivery.
2. Report of her symptoms since delivery.
3. Examination of breasts and nipples.
4. Examination of abdomen, particularly the fascia, muscles looking for ptosis and movable kidneys.
5. Inspection of perineum and anus.
6. Bimanual examination of vagina and pelvic contents, note being taken of the descent of the uterus and the size and position.
7. Speculum examination to see the condition of the inside of the vagina and the condition of the cervix.
8. Examination of the baby is a report of its departure from the normal, examination of its breasts, mouth, abdomen for hernias and healing of the navel and its anus and prepuce.
9. General instruction to mother about diet, bathing, breast instruction, nursing, exercise, particularly exercises directed to strengthen the abdominal muscles and fascia, sexual life, etc.

10. Instruction to return for treatment in the event that treatment of any departure from normal seems necessary.

To the end that pre-natal and post-natal care may be popularized and made practical for the general practitioners, a committee has been formed, made up of equal representation from the Medical Society of Virginia, the University of Virginia and the Medical College of Virginia. This committee is in the midst of studying the situation of the State and of formulating a plan to demonstrate pre-natal and post-natal care to every doctor in the State.

If every pregnant woman in the State of Virginia could have adequate pre-natal and post-natal treatment, the infant and maternal mortality would be enormously reduced and the doctors would add to their income a very considerable amount.

26 *North Laurel Street.*

PRESIDENTIAL ADDRESS.*

By PAUL C. COLONNA, M. D., New York City.

It is my pleasant duty to welcome you to this seventh annual meeting. All of us who have been able to attend the annual meetings have felt a growing sense of appreciation to Dr. Horsley for conceiving and initiating such an organization. We have at present thirty-one members and are growing each year in numbers and as well, we hope, in scientific endeavor. Therefore, I thought it might not be amiss to tell you very briefly some of the thoughts that occurred to me regarding the opportunities offered to members of an organization such as ours.

The renewing of old friendships at each annual meeting and the forming of new ones among the men who have recently completed their internships is always very helpful. However, this group was organized not only to promote good fellowship but encourage as well scientific activity among its members. Since its inception, the society has perforce grown slowly but the meetings have shown it to possess a wide variety of interests and talents made up, as it is, of geographically scattered units. Moreover, it seems to me, the meetings have helped to strengthen a rather uniform ideal of professional responsibility among us, for we who have had the opportunity of being interns at St. Elizabeth's know "that nothing is more inspiring than a great teacher—one in whom a great passion for truth and an enthusiasm for imparting it burn fiercely."

Another matter which should engage the attention of each of us is a consideration of the problems connected with the future practice of medicine. From the many articles appearing in lay and scientific journals, everyone is forced to realize that the profession is in a period of adjustment that is bound to be far-reaching in its consequences. Upon what basis will ethical conduct be determined? What will be the future relationship between doctor and government or doctor and industry? A solution to these questions is earnestly sought by every local, state, and national organization interested in medical progress. A recent editorial writer in the *Southern Medical Journal* very aptly remarks that "the medical mores are changing. What is ethics in one city is grievance in another." This subject is trenchantly dealt with by Glenn Frank in the January issue of *Surgery, Gynecology and Obstetrics.* He issues a note of warning to the medical profession regarding the medical revolution that is now taking place in society. He feels that the most satisfactory approach to these problems will be in the development of wise medical statesmenship within its ranks which will insist upon a professional house-cleaning and outline a program for the future. This he believes is imperative unless the health and welfare of the nation is to be controlled by such agencies as government, industry, or insurance companies. Not only, says Frank, should the physician attend the sick but it is his duty to spread information and develop interest in the preventive side of medicine. In this, all organizations such as ours can do their bit. As preventive medicine in its broad sense is a step ahead of corrective medicine, it offers the physician the opportunity to assist in developing a stronger and hardier race.

May I now say a few words about the work of the society. During the past several years your program committees have chosen the symposium method, that is having as far as possible the entire program consist of some particular phase of medicine or surgery. This has proven most satisfactory and the members

*Delivered before the Seventh Annual Meeting of the Ex-Interns' Association of St. Elizabeth's Hospital, Richmond, Va., October 7, 1930.

of the committee deserve the thanks of each one of us for their unceasing work in the preparation of our program. I think I might speak here for all future Program Committees and ask that members of the society communicate with them as early as possible each year upon any subject they wish discussed at the next meeting. I feel sure that each member of this association feels personally responsible for its growth, for only in this way can it continue to be a virile and vigorous organization. There is one other thing that occurs to me and that is the desirability of closer contact of the members throughout the year. The handbook which is published for the first time this year and upon which your Secretary has worked so hard, will undoubtedly aid in doing this. It is to be hoped that at least it will encourage the exchange of reprints among the members.

In closing I should like to say that I value highly the honor of having been elected President of the Ex-Interns' Association of St. Elizabeth's Hospital.

59 *East 54th Street.*

THYROID PHYSIOLOGY.*

By EDGAR A. HINES, Jr., B. S., M. D., Spartanburg, S. C.

The thyroid gland might well be called the energizer of the body. One has only to see a case of myxedema to realize its great importance in maintaining a normal, active life. Of course, we cannot definitely state the role of the endocrine glands in the evolution of life from the lower forms, but it might be conjectured that animal life lifted itself from a sluggish, listless existence in the proterozoic mud and slime to our present mile-a-minute performance through the development of a thyroid gland.

No organ in the body has received more intensive study and in no problems have physiological and clinical research increased more brilliantly our knowledge than have the studies of thyroid function.

To recount briefly some of the epochal discoveries relative to this subject, we must begin in 1874 with Gull's brilliant paper "On a Cretenoid State Supervening in Adult Life in Women" in which hypothyroidism was first described. Five years later Orb, in performing a necropsy on a patient who had had hypothyroid symptoms, found a mucin-like material in the subcutaneous tissues, and he gave us the name *myxedema.* The exact relation of the thyroid to myxedema was not clear, however, until Kocher and Reverdin described a similar condition occurring after complete extirpation of the thyroid gland in some of their patients. In 1895 Bauman discovered that thyroid tissue contained iodine and thereby opened the field for the extensive biochemical studies which have followed. Oswald later demonstrated that the iodine was in the form of idothyroglobin and in 1914 Kendall isolated the activating hormone *thyroxin.* Harrington, after a series of brilliant experiments in 1926 determined the chemical structure of thyroxin and a short time later produced a similar substance synthetically.

To enumerate some of the clinical contributions to the solution of this problem, we must cite Murray's successful treatment of a case of myxedema by feeding thyroid extract, started in 1891; Marine and Kimball's prophylactic use of iodine compounds for the prevention of goiter in school-children, and Plummer and Boothby's use of Lugol's solution in lowering the hyperthyroid symptoms of Graves' disease.

Outstanding, among the more recent studies, are those of Harvey, of the Rowlette Research Institute, Rabinowitch, of the Montreal General Hospital and Cameron and Fraser, of the University of Manitoba, on the relation of vitamin feeding to thyroid activities. They have shown that the combination of Vitamin A and D with iodized fatty acids or even with sodium iodide produces the same powerful effect as Lugol's solution but that they are inactive if given separately. These studies bring us another field of thyroid investigation.

A consideration of thyroid physiology must include first, a study of the composition and function of the thyroid secretions *per se*, and secondly, the interrelation of the thyroid with the other endocrine glands.

Iodine is the *alpha* and *omega* of the study of thyroid function. Around this simple element revolves the whole activity of this important gland. It is through this iodine that the powerful activating hormone thyroxin is elaborated.

The major function of the thyroid is to pro-

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vide a means for maintaining a higher rate of metabolism than would otherwise obtain and for varying this rate to meet the changing bodily demands. Or as Marine has aptly said, "Physiologically, the lung has to do with external respiration, while the thyroid has to do in some important way with internal respiration or the utilization of oxygen by the tissues." There is not a cell in the body which is not influenced by this gland. That the thyroid is not necessary to life is evident from observation but, as Crile has said, it is "synonymous with making life worth living." Experiment has repeatedly shown that only 40 per cent of metabolism is under thyroid control. Cretins, persons with myxedema and those with cachexia strumipriva maintain metabolism of approximately 60 per cent of normal.

Biochemically, we might say that the function of this gland is to maintain 14 mg. of thyroxin in the body or to elaborate and deliver 0.33 mg. of thyroxin daily. (The tremendous power of this hormone is strikingly demonstrated by the fact that the minute quantity of only 0.33 mg. daily is needed to maintain a normal metabolism.)

Physiologically, however, we must go much further and say that it is concerned with metabolism, heat production, growth, endocrine balance, intellectual and emotional stability, with the regulation of the circulation and possibly with detoxication.

We have already discussed the thyroid effect on metabolism. That this organ is intimately concerned with heat production has been abundantly proved by experiments in which it has been shown that administration of thyroid gland causes a striking increase in heat production; that there is a normal rise in heat production during pregnancy and lactation which is greatly reduced by thyroidectomy, and that thyroidectomy causes a decrease in heat production.

Cretinism, in which there is a congenital absence or atrophy of thyroid tissue, is proof enough of the influence of this organ upon growth. To further this proof, I might cite the interesting experiment whereby tadpoles have been caused to go through their metamorphosis in a fraction of the normal time by adding thyroid extract to the water in which they were living.

There is little doubt that the thyroid through its relation with the pituitary and adrenals has some influence on the circulation. Clinically this may be shown by the increase of the blood pressure in hyperthyroidism and following large doses of thyroid extract.

The influence upon intellectual and emotional stability is shown by the close resemblance of the attitude of fright to that of exophthalmic goiter. The simulation is so marked that the term "frozen fright" has been ingeniously applied to Graves' disease. The expressionless face of the cretin or person with myxedema indicates a complete lack of emotion.

The observations of many physiologists and clinicians seems to indicate that the thyroid, in some undetermined manner, influences bactericidal and antitoxic properties of the blood and that removal of this gland definitely impairs these properties.

Finally, we come to the interrelationship of the thyroid with the other endocrine glands. In this field we find most of our remaining thyroid problems. I shall briefly summarize the different glanular relations:

Thyroid-parathyroid: The present opinion seems to be that there is no definite relation.

Thyroid-pituitary: That there is a definite relation here has been shown by the fact that the pituitary becomes hypertrophied after thyroidectomy and that administration of pituitary extract is sometimes of benefit in hypothyroidism.

Thyroid-adrenals: Here the relationship seems to be closer than with any other gland. The hypersensitiveness of cases of exophthalmic goiter to adrenalin is a clinical application of this relationship.

Thyroid-thymus: No relationship has been proved.

Thyroid-sex glands: Nothing certain has been proved here, but observation, even by the ancients, of the enlargement of the thyroid with menstruation and pregnancy shows some intimate association of these glands.

BIBLIOGRAPHY

Bauman and Hunt: On the Relation of Thyroid Secretion to Specific Dynamic Action, *Jour. Biol. Chem.*, lxiv, iii, 709.

Cameron: Thyroid Function From a Chemical Viewpoint, *Canad. Med. Asso. Jour.*, April, 1922.

Cameron: Some Notes On Our Present Knowledge and Ignorance of Thyroid Function, *Canad. Med. Asso. Jour.*, February, 1930.

Else: The Relationship of Iodine to Thyroid Hyperplasia and Function, *Endocrinology*, xiii, i, 40.

Editorial: *Jour. A. M. A.*, November 30, 1918.

Harrington: Isolation of Thyroxin From the Thyroid Gland, *The Biochem Jour.*, xx, ii, 293.
Harrington: Construction and Synthesis of Thyroxin, *The Biochem Jour.*, xx, ii, 300.
Kendall: The Physiology of the Thyroid Gland, *Atlantic Med. Jour.*, 30, 609.
Marine: The Importance of Our Knowledge of Thyroid Physiology, *Arch. Int. Med.*, 32, 811.
Marine: Present Status of the Function of the Thyroid Gland, *Physiological Review*, October, 1922.
Mosiman: The Thyroid Gland, *Northwestern Med.*, 26, 97.
Monsarrat: Functions and Disorders of Thyroid Gland, *The Clinical Jour.*, lvi, 16.
Plummer: The Function of the Thyroid Gland, *Tr. Asso. Amer. Phys.*, xliii, 159.
Porter: Endocrinology: Its Relation to Internal Medicine, *Va. Med. Monthly*, January, 1922.
Williamson: The Applied Anatomy and Physiology of the Thyroid Apparatus, *Brit. Med. Jour.*, xiii, 51, 467.

THE SURGICAL TREATMENT OF GOITER.*

By R. G. WATERHOUSE, JR., M. D., Knoxville, Tenn.

Surgery of the thyroid gland is mainly concerned with its partial removal. Derangements of the thyroid gland, at least those giving rise to enlargement, that is goiter, have been known and recognized since the earliest times. And hyperthyroidism has been known to the profession since the days of Graves, Parry and Basedow. The surgery of the thyroid gland has no such antiquity.

Only forty-five thyroidectomies had been recorded in the United States prior to 1883. And the development of the operative treatment of hyperthyroidism belongs to the present century. Anything like a complete understanding of this latter condition dates only from the beginning of the clinical determination of the basal metabolic rate.

The high mortality rate in early goiter work was in all probability due to failure to recognize the presence of hyperthyroidism and lack of knowledge as to the proper method of controlling it.

If hyperthyroidism was diagnosed it was usual to hope or wait for a remission in the disease before undertaking operation.

As late as eight years ago one of the large clinics in this country was refusing operation in advanced cases of hyperthyroidism and referring these cases to the medical department, with a consequent high medical mortality rate.

However, as early as 1917 Dr. George W. Crile, of Cleveland, had reported results of 2,169 operations for goiter, 1,020 of which had been for hyperthyroidism. He views hyperthyroidism as a tremendous pathologic kinetic drive in which the endocrine glands and the nervous system were all involved, and the thyroid gland as the link in the chain most available to surgical attack. He held that this kinetic drive could be modified in four ways.

1. By eliminating or diminishing the external and internal driving stimuli.

2. By depressing the sensitiveness of the nervous system.

3. By diminishing the amount of thyroid tissue.

4. Probably by diminishing the suprarenal tissue.

As repeatedly pointed out by him, these extremely hypersensitive patients may be killed by worry, fear, work, slight injury, surgical trauma, surgical anaesthesia, even mild infection. Any of these things may usher in a "hyperthyroid crisis" in which the metabolic rate, the pulse, and temperature rise rapidly, intracellular then actual acidosis develops, followed, if uncontrolled, by coma and death. Hence Dr. Crile recommended and instituted for these patients a system of handling which he termed anociated treatment in the broadest sense.

In the preparation period, rest in bed was secured, aided, when needed, and it almost always was, by bromides and such drugs as the barbituric acid compounds, or morphine if necessary. Everything possible was done to give the patient an optimistic outlook, and all worry, anxiety, etc., as far as possible was eliminated. During this period cardiac or other complications were appropriately treated and an effort made to secure a normal water, salt and food balance.

The object of operative procedure was to diminish thyroid activity. Early Dr. Crile tried many types of treatment, including injection of quinine and urea, radiation, etc. Eventually a definite series of step or stage operations was developed.

1. Ligation of one superior pole.
2. Ligation of the other superior pole.
3. Lobectomy, neck left open.
4. Thyroidectomy, wound left open.
5. Thyroidectomy, closed.

The operation done depended wholly on the risk status of the patient. In the extremely active cases ligation of one, then the other

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superior thyroid pole was done under local anaesthesia, the patient then being allowed to go home for about three months, after which time enough improvement had usually taken place to make lobectomy feasible.

In better risk patients a lobectomy or a bilateral partial thyroidectomy was done at once, the resection of the gland being so planned that at any time during the operation or at any stage the operation could be stopped if the condition of the patient made it desirable. The desired amount of gland or of one lobe having been removed, the neck was packed open or closed as conditions indicated.

At first the severe cases, later all cases, were operated on in bed to avoid the psychic and physical strain of transportation to the operating room. Ether anaesthesia was used by Dr. Crile in the earlier cases, but, because ether itself could stimulate a crisis, novocain infiltration with nitrous oxide-oxygen analgesia was substituted, being followed by a gratifying lowering of the mortality rate.

The post-operative "hyperthyroid crisis" or drive was controlled:

1. By sedatives, as with morphine.
2. Hypodermoclysis to keep up the water and salt balance and to aid elimination.
3. By ice packs.

The first two require no comment. The third by lowering the temperature of the organism slowed bodily chemical reactions, lowered or checked the excessive metabolic changes, and thereby protected the individual.

After a successful operation the patient was ready to go home in a few days. There treatment was continued by a strict regime of diet and rest until maximum benefit from the operation was obtained.

So much for the development of surgery of the thyroid gland. If Dr. Crile has seemed to play a very prominent part in this paper, it is only because he played a more prominent part in the development of goiter surgery. When he began his work surgical operations upon the thyroid gland were undertaken with much misgiving and uncertainty of outcome. Today we may say that operation upon the thyroid gland is indicated in:

1. Benign enlargements of the gland, which are unsightly or by reason of size or position, cause pressure symptoms, obstruction of breathing, etc.
2. In the case of the "fetal" adenoma for the prevention of carcinoma. Ninety-four per cent of thyroid carcinomata arise in fetal adenomata. Ten per cent of fetal adenomata removed at operation show malignant change.
3. In hyperthyroidism.

It is generally considered whenever a sufficient degree of hyperthyroidism is present to make a diagnosis, with the possible exception of certain induced cases particularly at or near adolescence, that operation is always indicated. In any event, the advisability of operation should be carefully considered and the patient carefully watched whenever a diagnosable degree of overactivity exists.

Pre-Operative Treatment

The present treatment pre-operatively differs from that originally outlined by Dr. Crile only in the use of Lugol's solution. As early as 1911, Marine stated that the administration of iodine would lower the metabolic rate, but not until 1922, when Plummer suggested the use of Lugol's solution in large doses, was its value definitely proven. Now the routine preparation of a case of hyperthyroidism consists of the following measures: (1) absolute rest in bed, (2) luminal or bromides for sedation, (3) large quantities of fluids and food (omitting meats and other high protein foods and all stimulants), (4) Lugol's solution in fifteen minim doses given in cream three times a day, and (5) thyroid extract in two grain doses the night before and morning of operation to prevent a too sudden deprivation of thyroid secretion.

The maximum improvement with Lugol's solution occurs in six to twelve days. The operation is timed to take advantage of this improvement. It must be remembered that this improvement produced by the iodine is merely a temporary remission in the disease. Even small doses of iodine, if continued, cause an exacerbation of symptoms and increase in the metabolic rate, and a new high level of the disease may be established and maintained, or, if iodine be suddenly stopped, an exacerbation may occur. It also appears that once an iodine remission has been secured, subsequent treatment with iodine is not so satisfactory. Iodine should only be used in hyperthyroidism in preparation for operation.

Digitalis is given, not to slow the heart rate in hyperthyroidism except in the case of fibril-

lation, but because of its stimulating action on the heart muscle. The heart in hyperthyroidism at first presents a simple tachycardia, then dilatation and murmurs, then flutter or fibrillation, and, finally, almost any type of arrhythmia and degree of decompensation. Enough digitalis should be given pre-operatively to secure the best cardiac condition possible. In mild cases of cardiac impairment a small amount of digitalis may prevent post-operative cardiac embarrassment during the reaction period.

Operative Treatment

The technique of the operation may be briefly described:

1. A low collar incision of ample length.
2. Dissection of the skin flaps upward to the thyroid cartilage and downward to the sternum.
3. Longitudial division in the mid-line of the ribbon muscles and transverse division of these muscles between clamps in large goiter if the longitudinal division does not give adequate exposure.
4. Beginning resection of the gland from its attachments to the trachea, carry the resection downward and outward in the gland to the posterior capsule, securing hematosis with accurate small hemostats and leaving a sufficient amount of thyroid tissue to cover and protect the parathyroid glands and recurrent laryngeal nerves both from injury at operation and from subsequent scar tissue formation. As this resection proceeds and the gland is freed from the trachea, it is gradually, without undue traction, delivered into the operative field and only enough tissue left for the physiological needs of the patient. The amount of tissue to be left depends on the age of the patient and the severity and duration of the disease. More gland should be left in the old and more in the slowly developing cases, but less in the young and in the acute cases running a stormy course with marked fluctuation. The basal metabolic rate as determined in the laboratory is no indication of the severity of the disease, but the amount and rapidity of the weight loss is. No absolute rule can be laid down, but best results are obtained when a mild "hypo" condition is produced that lasts from three to six months, during which time reparation of the entire endocrine and nervous system can take place.
5. Hematosis is secured with catgut ties and suture ligatures.
6. Muscles approximated in mid-line.
7. Drain usually inserted.
8. Skin closed with skin clips, or wound packed open—to be closed at a later date.

In intrathoracic goiter even greater care must be taken in freeing the gland below the level of the clavicle and sternum because severe hemorrhage may occur. Having carefully freed the lobe, the intrathoracic portion can usually be gently delivered into the field. Expansion of the lung will soon close the intrathoracic cavity and bring the whole field into view so that careful hemostasis can be secured, but if there is the slightest oozing the cavity should be packed lightly with gauze and the neck left open for subsequent closure, because bleeding into the mediastinum, if it occurs, is very dangerous of itself, and a subsequent mediastinitis is apt to develop which is almost uniformly fatal.

Post-Operative Treatment

One of the most important post-operative complications is stridor. This may be due to nerve injury—bilateral or unilateral. If for any reason there is difficulty in breathing post-operatively, a tracheotomy should be done and that before the patient has become cyanosed. Unless immediately relieved, the patient may very promptly pass into a coma from which he may never arouse.

Post-operative hemorrhage is a serious complication, and, if unattended, the patient suffocates from pressure of the blood clot on the trachea.

Post-operative tetany is fortunately not frequently seen. If it occurs, the parathyroid hormone of Collip is most effectual in its treatment. If blood calcium is lowered, calcium chloride or lactate should be administered.

The post-operative hyperthyroid crisis, since the use of Lugol's solution, is not so common. When it occurs, it should be combated by ice-caps, ten to fifteen or twenty in number, and, if necessary, the complete ice pack. The wound should be carefully inspected and any serum drained away. Often the removal of a very small amount of serum will cause almost immediate amelioration of symptoms.

Occasionally an acute restlessness with circum-oral pallor and a dry shiny skin is seen

post-operatively. This is due to acute deprivation of thyroid secretion and calls for the administration of thyroid extract.

Tracheitis is an annoying post-operative complication. Its prevention consists in leaving the trachea well covered with fascia at operation. If it exists, inhalations of compound tincture of benzoin are beneficial.

Immediately after the operation 2,000 c.c. of saline should be given by hypodermoclysis. Pre-operatively each patient should be typed and donors secured. If there is hemorrhage or if need arises, the patient should be transfused. A good rule is, when in doubt, transfuse. If for any reason a donor is not available, 5 per cent glucose solution intravenously is a good substitute for whole blood.

In no branch of surgery is prompt action so essential as in thyroid surgery. Therefore, anticipate every emergency and treat it almost before it arises.

The end-results of surgery of the thyroid gland, when carried out as outlined, are very gratifying. The mortality has been reduced to about 1 per cent, and most of the deaths are due to embolism, massive collapse of the lungs, and such accidents against which as yet we have no adequate defense.

The end-result as to restoration of health depends, first, on the degree of damage to other organs—particularly the heart. Therefore, patients should be operated on early in the disease before permanent injury has occurred. Second, there must be an accurate estimate of the operability of the patient, insuring proper preparation and proper selection of the operative steps, so that he comes through with maximum reserve.

An amount of gland must be removed to relieve the symptoms and prevent recurrence. An amount of gland must be left sufficient to protect the parathyroid gland and recurrent nerves and carry on the physiological needs of the individual.

I think we can safely say that the outlook for the patient undergoing an operation on the thyroid gland is as good as that in any other major surgical condition.

Laugh everytime you feel tickled and laugh once in a while anyway.—*Selected.*

EFFECTS OF THYROID DISEASE ON THE HEART AND CIRCULATION.*

By A. A. HOUSER, M. D., Richmond, Va.

The cardiac disturbances associated with thyroid disease were the most striking features observed by Parry[1] in 1815 in the first described cases of exophthalmic goiter. His first case died with heart failure. Heart and circulation disturbances, more often than otherwise, are associated with every type of thyroid disease.

The simplest cardiovascular disturbances caused by thyroid disease may be from pressure of a large colloid goiter, mechanically preventing the adequate filling of the lungs with air, producing emphysema and later asphyxia. The continued deficient aeration of the blood may lead to cardiac overstrain and myocardial weakness. The goiter may press on the sympathetic ganglia, on one or both sides of the neck, stimulating the accelerators, producing a tachycardia simulating that of Basedow's disease.

In hypothyroidism there is usually a cardiac disturbance of some kind, often shortness of breath, weak pulse, sometimes slow heart rate, though there may be a fast heart. There seems to be a tendency in myxedema to early arteriosclerosis.

In 162 cases of high grade myxedema studied by Willius and Haines[2] at the Mayo Clinic, there was no heart failure or cardiovascular disease that they could conclude was caused by the myxedema.

There were many electro-cardiographic abnormalities that disappeared under thyroid medication. They concluded there was no justification of a cardiovascular syndrome characteristic of myxedema.

Fahr[3] reports that six cases of untreated myxedema seen by him over a period of four years at the Minneapolis General Hospital and Minnesota University Hospital had symptoms and signs of heart failure that cleared up with thyroid medication.

The larger interest in goiter is in Basedow's disease and likewise the heart disturbances that are often associated. The heart behavior in cases of hyperthyroidism is varied beyond the possibility of description, tachycardia being the most consistent disturbance.

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Foster[4] says that cardiac symptoms with thyroid disease are the usual occurrence, but hyperthyroid disturbance may be very pronounced without evidence of heart disease. The so-called heart deaths that follow operation are seldom due to heart failure; they are usually the result of vascular failures. There is a dilatation of the peripheral blood vessels, a sharp drop in diastolic blood pressure, a condition simulating shock. He also states that the commonest type of heart disturbances is auricular fibrillation. Whether this arrhythmia is due to lesions in the myocardium or to nerve influence is not known. Heart block and auricular flutter are of rare occurrence and, when they happen, probably denote serious myocardial degeneration. In the cases of auricular fibrillation, a reversion to normal rhythm may be usually secured by proper treatment, which includes rest, digitalis, and quinidin.

Phillips and Anderson,[5] in a study of 120 cases of auricular fibrillation associated with hyperthyroidism, found that 60 per cent returned to normal rhythm after operation. In case the normal rhythm is not restored, thyroidectomy will improve the heart quality to a degree that it can be controlled by digitalis.

Huxthal[6] concluded after the examination of 500 cases of hyperthyroidism over a period of fifteen months that, if thyrotoxicosis injures the normal heart, there should be more evidence before the age of forty. He believed that thyrotoxicosis has a specific excitatory effect on the heart and that this, more than the extreme work, produces failures in a heart weakened by the degenerative changes of age. He also believed immediate removal of thyroid toxicity by surgical procedure the best means of avoiding congestive heart failures.

Babcock's[7] book published in 1905 still covers the subject very adequately. His entire statement on the subject of goiter heart is, "The hypertrophy and dilatation of the heart observed in exophthalmic goiter is to be attributed not to the tachycardia but to the underlying condition, whatever that may be."

In discussing the effects of any existing pathological condition upon the heart and circulatory system, there is a more or less universal tendency to disregard all evidences of heart or circulatory functional disturbances until well established pathology is produced. Reasonably normal circulatory systems are capable of a great deal of abuse before they show positive evidences of degenerative changes. There is no organ that is so functionally receptive to the existence of slight pathological or functional embarrassment of the individual as the heart. As yet there is no means of discussing these changes as they come more under the sphere of art than of science.

Thyroid disease is a great disturbing force to the individual, and I believe always manifests some disturbance to the cardiovascular mechanism, but the variations are too wide for charting a definite thyroid cardiovascular syndrome.

References

1. Hershfield: Disease of the Heart and Aorta.
2. Willius, F. H., and Haines, S. F.: The Status of the Heart in Myxedema. *Amer. Heart Journal*, 1:87, 1925.
3. Fahr, G.: Myxedema Heart, *Amer. Heart Journal*, 3, 14, 1927.
4. Foster, N. B.: Goiter Heart, *Amer. Journal Med. Sci.* 169:662, 1925.
5. Phillips: *J. A. M. A.*, 89:1380, 1927.
6. Huxthal, L. M.: Heart Failure and Hyperthyroidism, *Amer. Heart Journal*, 4:113, 1928.

DIAGNOSIS AND TREATMENT OF THYROID DISEASES IN CHILDREN.*

By W. AMBROSE McGEE, M. D., Richmond, Va.

It is unfortunate that the classification of thyroid diseases is so vague and varied. A different nomenclature has been adopted in nearly every work on that gland.[1] Some of the present day terms are merely descriptive of a prominent symptom.

Thyroid diseases, while not so common among children as among adults, occur more frequently than was formerly believed. Toxic thyroids, so prevalent among adults, are rarely seen under twelve years of age. A simple, though fairly comprehensive classification of thyroid diseases in children is as follows—simple goiter, hypothyroidism and hyperthyroidism or thyrotoxicosis. Neoplasms and inflammations of the thyroid are so rarely seen that they are worthy only of mention.

Simple goiter is rarely seen under five years of age. It is often called adolescent goiter or physiological enlargement of the thyroid. This condition occurs frequently among girls before puberty. It is commoner in regions in which the iodine content of water is very low.

*Read before the Seventh Annual Meeting of the Ex-Interns' Association of St. Elizabeth's Hospital, Richmond, Va., October 7, 1930.

The disturbance can usually be prevented by adding one part of iodine to a million parts of water or by the use of iodine salts. The iodine salts most generally used are iodized table salt (which is prepared by adding 5 mg. of potassium or sodium iodide to a kilogram of sodium chloride); chocolate iodine tablets in doses of 3-10 mg. once weekly[2] and sodium iodide in doses of 30 centigrams twice daily each spring and autumn, until 2 gm. have been given.[3] It is advisable to begin these salts at age ten and to continue them till sixteen years of age in regions where goiters are prevalent. Whenever a mother has a thyroid enlargement, one should certainly consider the use of iodine as a prophylactic measure for the child. Care must be exercised that no patient with adenomatous goiter receives iodine, but fortunately one practically never sees that type of thyroid disturbance under twelve years of age. The age of the child with a goiter plus the normal or nearly normal metabolic rate are all that is usually necessary to diagnose the condition of simple or adolescent goiter. Patients with simple goiter should be watched subsequently for at least one year.

It is commonly thought that goiters are more prevalent inland than on the sea coast due to less iodine in the water in the interior. There has also been an idea that the iodine was spray-borne along the sea coast. Weston[4] proved rather conclusively in his State of South Carolina that such is not true, and, on the contrary, there is less iodine per million gallons of water on the sea coast than inland. It looks as if something else is a factor besides the iodine content of water and inheritance in explaining the cause of goiters. Weston believes that South Carolina has such a low incidence of goiter because of the richness of iron, copper, manganese and iodine in its soil. He feels that the combination of the four minerals rather than iodine alone must be a factor in preventing thyroid enlargements in South Carolina. Because of the splendid work of Weston and his co-worker, Remington,[5] South Carolina foods have been most carefully analyzed, and canned goods from that state bear labels showing their usual mineral content. This idea may do much to lower the incidence of goiters in the future.

The most common thyroid disturbance in childhood is hypothyroidism. Where there is a lack of thyroid function early in life the condition is spoken of as cretinism; where there is a deficiency or absence of the thyroid hormone after the growth impulse has subsided, the hypothyrodism is called myxedema, and where the basal metabolic rate is slightly below normal, the term mild hypothyroidism is used to designate the condition.

Cretinism is rarely endemic in this country. It occurs sporadically with heredity playing a big part. Herrman[6] believes cretinism is not due entirely to hypothyroidism but to other members of the endocrine system, especially the anterior lobe of the pituitary gland. A typical cretin is easily recognized after six months of age. The earliest symptoms are sparseness of hair, thickening of the subcutaneous tissues and slight hoarseness in a child who is unusually quiet. The outstanding signs and symptoms of a typical complete cretin after six months of age are exaggeration of the early symptoms just mentioned; disproportion of bodily structures (short arms and legs, long trunk and large head); slow ossification; thick open lips; low wrinkled forehead, eyes widely separated; protruding tongue and large umbilical hernia. In older cretins a dwarfed body with regular deposits of fat in the supraclavicular region, in the axilla, between the scapulae and occasionally in other parts of the body will usually be noted. Basal metabolic tests will show a minus 20-40 per cent unless malnutrition is present.[6]

In the treatment of cretinism, thyroid extract acts most satisfactorily if begun early in infancy and continued until after puberty or for life. Complete mental and physical cure is probable if thyroid extract is started before four months of age. Before beginning thyroid extract it is imperative to establish diagnosis, for metabolic tests are not of diagnostic value during treatment and both signs and symptoms are obscured or never develop.

The daily dose of thyroid extract recommended by Talbot[9] is ¼ grain from 2-4 months; ½ grain from 4-8 months, ¾-1 grain from 8-12 months, 1-2 grains from 12-24 months, 1½-3 grains from 2-4 years and 3-6 grains from 4 to 12 years.

Myxedema of childhood or late hypothyroidism is relatively uncommon among children. There is no permanent mental dullness and that which is temporarily present can be restored to normal by treatment with thyroid extract. There is little or no abnormality of

development due to the late deficiency of thyroid function. Outstanding signs and symptoms are constipation, lack of perspiration, hoarseness, some thickening of the tongue and lips, a feeling of coldness, puffiness of upper eyelids, cessation of growth and a sort of expressionless face, increase in weight, dry thick skin which does not pit on pressure and a metabolic rate as low a minus 20 per cent.

Mild hypothyroidism is a very obscure condition which can only be diagnosed by the metabolic rate. There is usually delayed growth and some slight mental dullness which causes the child to be unusually quiet and silent. Occasionally some children with eczema fall into this group and they are greatly benefited by thyroid extract. This is perhaps the most common endocrine dystrophy of childhood. Infants whose diets are properly managed and who fail to grow should be suspected of thyroid deficiency. There may be some puffiness beneath eyes resembling nephritic edema. These patients often have a slow pulse, sub-normal temperature and slow respiration. Thyroid extract also greatly benefits this group of cases.

It is peculiar that thyroid extract even in relatively large doses (15 gr. daily) has no effect on basal metabolism of normal children but stimulates growth.[8] Topper and Cohen[9] question whether or not the basal metabolism should be the criterion of the effect of thyroid therapy in normal children, especially as thyroid produces other physiological and metabolic responses.

Hyperthyroidism in children is perhaps more common than was formerly supposed. Its etiology is unknown. The onset is usually abrupt and the clinical course rapid. The signs and symptoms are similar to those in adults except presence of choreiform movements and weakness of quadriceps femoris in children. The most characteristic evidence of hyperthyroidism is enlargement of the thyroid gland, tachycardia, tremor of the extremities, restlessness, irritability, nervousness, nervous instability, exophthalmos and elevation of basal metabolic rate. There is a less degree of exophthalmos and less increase in basal metabolic rate in children. Helmholtz[10] found that the severity of the ocular symptoms does not necessarily indicate the degree of hyperthyroidism. One almost never sees hyperthyroidism among children in non-goiter regions.

Medical treatment of toxic thyroid in children consists in absolute rest and administration of adequate food. As long as there is improvement this plan of treatment should be continued. Lugol's solution is not used to any extent except just before an operation. Children should be kept quiet until their metabolic rate remains about 15 per cent above normal. Care should be taken to avoid endocarditis.

If the child fails to improve with absolute rest and adequate food, radiation should be used. That procedure offers more satisfaction and at the present time is safer than operative measures. It should, however, be given under the supervision of the surgeon. When an enlarged toxic goiter mechanically obstructs the trachea it is essential to rely on surgery. Unfortunately children are extremely susceptible to all kinds of operative procedures, but where there are foci of infections these should first be removed.

It is important to make a proper diagnosis early in thyroid disturbances of childhood, for the prognosis is better and the outcome more desirable. Thyroid extract has proven of great value in treating forms of hypothyroidism, while iodine has done much to reduce the incidence of thyroid disorders. Where the latter is given to mothers with thyroid enlargements other than toxic adenomas, there is little likelihood that the offspring will be a potential thyroid case.

BIBLIOGRAPHY

1. Janney, Nelson W.: Diseases of the Thyroid Gland, Abt's Pediatrics, Philadelphia, W. B. Saunders Co., Vol. IV, p. 686.
2. Talbot, Fritz B.: The Thyroid Gland, Clinical Pediatrics, New York, D. Appleton Co., Vol. XIII, p. 46.
3. Veedor, Borden S.: The Prevention of Specific Diseases, Clinical Pediatrics, New York, D. Appleton and Co., Vol. IV, p. 126.
4. Weston, William: Foods in the Solution of the Goiter Problem, *Southern Medical Jour.*, XXIII, June, 1930, pp. 479-484.
5. Remington, Roe E.: Vegetable Food and the Goiter Problem, *Jour. of South Carolina Med. Assn.*, June, 1929.
6. Herrman, Chas.: The Pathogenesis of Sporadic Cretinism, *Arch. Pediat.*, 44:139, March, 1929.
7. Talbot, Fritz B.: The Thyroid Gland, Clinical Pediatrics, D. Appleton and Co., Vol. XIII, p. 57.
8. Talbot, Fritz B.: The Thyroid Gland, Clinical Pediatrics, D. Appleton and Co., Vol. XIII, p. 64.
9. Topper, Ann, and Cohen, Philip: The Effect of Thyroid Therapy on Children, *Amer. Jour. Dis. Child.*, 35: February, 1928, p. 220.
10. Helmholtz, Henry F.: Exophthalmic Goiter in

Childhood, *J. A. M. A.*, 87:157-162, July 17, 1926.
11. Janney, Nelson W.: Diseases of the Thyroid Gland, Abt's Pediatrics, Philadelphia, W. B. Saunders Co., Vol. IV, p. 693.

DISCUSSION OF PAPERS ON THE THYROID GLAND BY DRS. HINES, WATERHOUSE, HOUSER AND MCGEE.

DR. W. C. CAUDILL, Petersburg, Va.: The subject of these papers is an extremely interesting one. I wish, first, to congratulate the essayists on their papers; they have covered the subject in a very clear, concise manner.

I am interested particularly in the surgery of the thyroid gland. It has become a most satisfactory type of work in our clinic. We have had more than ninety cases operated upon on our service without a mortality. These cases have included some of the most difficult types of thyroid operations that I have seen anywhere; some of the patients were extremely toxic and some had marked changes in the heart. The outline of treatment which has been discussed here is the one that we follow largely. We consider the preparatory treatment of luminal, digitalis and Lugol's solution, and follow the operation with dextrose and a continuation of the Lugol's solution, as being the most favorable for the best results.

One part of this treatment which I believe has been introduced recently has, in my judgment, added more to the safety of thyroid surgery than any other one thing. That part is sodium amytal. We have been using this with local anesthesia, and find that the patients, instead of being restless and ill at ease, as they formerly were during the operation, actually go to sleep, are perfectly quiet, and the operation can be done under local anesthesia with the patient entirely comfortable. I believe it is one of the greatest advances that we have had in surgery of the thyroid gland.

DR. O. O. ASHWORTH, Richmond, Va.: It is needless to say that I have enjoyed all of these papers. I was especially interested in the paper read by Dr. Houser on the effects of thyroid disease on the heart and circulation. He covered his subject well, and emphasized particularly two things in regard to the effect of thyroid disease on the heart and circulation, that there is a factor which is largely mechanical, due not only to pressure from the enlarged thyroid gland but also to vascular dilatation; that is, the heart pounding against a vascular system which apparently is incompetent, due to overactivity of the sympathetic nervous system. We often see patients flushing around the neck with dilatation of the smaller blood vessels near the skin. We do not know exactly why the heart enlarges in these cases except from overwork to overcome the vascular dilatation to maintain proper circulation, and from so-called thyrotoxicosis. There are important complications, of course, such as auricular fibrillation and the various arrhythmias.

It is interesting to note at the Mayo Clinic, where many heart cases are seen, that more than fifty per cent of their goiter cases go to the clinic as heart cases, and are referred, after metabolism tests, to the goiter clinic.

DR. H. J. WARTHEN, JR., Baltimore, Md.: Dr. McGee said in his paper that he did not advise giving Lugol's solution in cases of toxic adenoma of the thyroid in children. I am not quite sure whether he meant a benign adenoma, or the so-called toxic adenoma. I know that in some cases iodine is not indicated in toxic adenoma, and some writers go so far as to say that there is only one class of adenoma, which is benign; of course, if he refers to these, iodine would not be indicated.

DR. D. G. CHAPMAN, Richmond, Va.: Each paper read has been very interesting, but, like Dr. Ashworth, I wish to discuss particularly Dr. Houser's paper. I have recently seen two cases of hypothyroidism which were rather unusual, in that they had been treated in three different hospitals in a colder climate for angina pectoris.

One case was advised to go to South America because the cold weather precipitated the anginal attacks. She went to South America and went from there to England, where it was somewhat cold; there she had several attacks. She came to this country, and when the weather became cold, the angina returned. She was having about ten attacks of angina a day when I saw her, and after she entered the hospital she would take 10 to 36 grains of nitroglycerine daily. This continued for about four days. The chief symptom was sensitiveness to cold; the patient could not allow her arms to become uncovered, and kept the covers tucked closely under her chin. Thyroid extract was given, and in three days the anginal attacks had ceased. She was soon out of bed, and has had no further trouble.

Another case was that of a Polish man, rather heavy set, weighing about 190 pounds. His first symptoms were noticed during the War, where he was exposed to cold and probably a certain amount of fright. When he came to this country he went North, where he suffered a great deal from cold. He spent the winter in Florida but, on returning home through Richmond, the weather was cold and the symptoms returned. He, too, was put on thyroid extract, and in four days the symptoms were cleared up. He has remained symptom-free since that time.

A third case was unusual in that the chief symptom was a rapid heart, which is seldom thought to be due to thyroid deficiency. This patient had a normal pulse rate of 60 per minute, but on exertion the rate would rise to 140 to 160 per minute. A few days after thyroid extract was given the patient felt better and has remained well. Digital's had been previously given in this case at several different times, without any effect.

DR. WRIGHT CLARKSON, Petersburg, Va.: I would like to ask how frequently calcified thyroid cysts are found. I have found one accidentally in doing some routine work at the Central State Hospital at Petersburg. The patient was a man with a very large growth beneath the chin in the thyroid region. On X-ray examination I found a calcified cyst four or five centimeters in diameter with a very dense calcified wall. The patient died following operation, and the growth proved to be a calcified thyroid cyst.

DR. J. SHELTON HORSLEY, Richmond, Va.: These are good papers, and an excellent oration. I happen to have had a case similar to the one reported by Dr. Dunn. A large sarcoma of the orbit was amputated by tying a ligature about it. It sloughed off, and the child died afterwards. Whether they are operated upon or not, these cases are almost always fatal.

In the thyroid symposium, the paper on the physiology of the thyroid and the discussion were quite interesting. I have seen recently an article, I think in the *Archives of Surgery*, in which the author is inclined to believe that many of the cases of heart disease from hyperthyroidism are probably due indirectly to the thyroid stimulation of the metabo-

lism. In other words, it may be a slightly diseased heart at first, and the stimulation of the excessive metabolism draws out defects in the heart which otherwise possibly would not have occurred. When the patient is examined for disease of the heart, taking exercise, such as going up steps, brings out the defect. The case of heart trouble reported by Dr. Chapman was on the other extreme. To give a patient with a bad heart and a normal metabolism rate thyroid extract would be foolish and might be extremely dangerous, with about the same effect as over-exercise, but when the metabolism rate is low, thyroid extract is definitely needed and gives good results. This shows the necessity of studying these cases carefully to find out which cases are actually heart cases from hypothyroidism and which are hyperthyroidism cases.

Dr. Waterhouse, in his paper on surgery of the thyroid, summed the matter up quite thoroughly, but there are one or two devices which we use that seem to be advantageous. In the last five years I do not think we have had a death from hyperthyroidism, though we have had no enormous number of cases—probably 115 or 120. We have changed our technic a little, and have been using avertin anesthesia. In addition to that, the preliminary and post-operative treatment is, I think, very valuable. The use of dextrose and Ringer's solution is of great value in these cases. I had a little girl, nine or ten years old—the youngest patient I have ever operated upon for hyperthyroidism—on whom I did a partial bilateral thyroid lobectomy. I believe we helped that case enormously by giving intravenously dextrose and Ringer's solution, which not only prevents dehydration, but acts as a buffer for the metabolism. In other words, something must be burned; we put dextrose in the blood and let the excessive metabolism burn that instead of the tissues. This can be given continuously. Some time ago I operated upon a patient in whom the gland was not very large, and closed the wound without drainage. The patient did very well at first, then had severe symptoms of hyperthyroidism; the temperature was quite high and she became delirious. I opened the wound and put in drainage, and used dextrose intravenously. I believe if these measures had not been used the patient would have died. I know now that all of these cases should have drainage inserted at the time of operation.

I would add to the treatment which has been outlined, then, the use of dextrose solution, 5 per cent., or if the hyperthyroidism is very marked, a 10 per cent. solution may be used in Ringer's.

Calcified thyroid cysts (as mentioned by Dr. Clarkson), are by no means common. It is fairly common to find areas of calcification in a so-called adenoma of the thyroid. I have had two or three cases in which almost the whole wall was filled with deposits of calcium.

Dr. A. A. Houser, Richmond, Va.: I wish to make one statement in regard to my present conception of hearts and thyroids. I feel rather antagonistic to the cardiologists or to there being a syndrome of any disease. I feel that a much more important thing to know about the heart is the sound of a normal heart. I believe that there are few normal hearts, not that all hearts are actually diseased, but there are a few hearts with the right kind of muscular ring. I think when we advance further in education concerning hearts, we will find out what a normal heart should sound like. I do not think there is an organ in the body that reflects the well-being of the entire body as the heart does. When we find a bad heart, whether it be a tachycardia or whether it is merely an unusual heart sound, I think it should be an urge to send for some one who can find out what the sound means.

It is a perfectly normal thing to find heart disturbances associated with thyroid disease, but the kind of heart disturbance is the important thing. We, of course, expect in any condition that disturbs the function of the body as hyperthyroidism does, to find a disorder of the heart. I do not think we should expect to have a syndrome, but at least some slight disorder. We hear of people dying from "heart failure" from worry, over the stock market or any other worry, people who are frightened, or pessimistic about things, or are unhappy; often they drop dead in the streets. In these people there is a great heart disturbance associated with their mental state, whether they have had any thyroid disturbances or not. Thyroid disease always tells us that something is wrong with the individual. Sir James Mackenzie summed it up by saying that "A rested heart never fails." The state of the individual has a great deal to do with the condition of the heart. If we can get a heart to tone down to its normal capacity, we would have fewer "heart failures."

Dr. W. A. McGee, Richmond, Va.: In children we use a great deal of phenobarbital in thyroid cases and in other conditions. In talking over the use of various preparations of this kind with the chief pharmacologist at the Medical College of Virginia, he said that amytal is the safest of all the preparations. Since then we have changed from the use of phenobarbital to amytal.

In thyroid diseases of children, as preventive measures, we use iodine in some tablet form. In suspicious toxic adenomas we rather hesitate to use iodine, however, for fear that it may make the condition worse.

Children often are a little more sensitive to treatment, or surgery, than adults, just as a hyperthyroid patient is a little more sensitive than the ordinary patient. They react somewhat more strongly to drugs or to any other treatment.

CESAREAN SECTION WITH SPECIAL REFERENCE TO THE LOWER SEGMENT TRANSVERSE INCISION—CASE ANALYSES.*

By WAVERLY R. PAYNE, M. D., Newport News, Va.

At the present time obstetricians the world over are expending much time and thought in an effort to develop certain methods which may be employed with a fair degree of safety in certain cases which have heretofore resulted in a high mortality when the classical Cesarean section was employed. The evolution of Cesarean section has been dependent upon the progress of aseptic surgical technic and anaesthesia.

In the beginning, Cesarean section was employed as a last resort to save the child of a dying mother, so that the maternal mortality at that time was necessarily close to 100 per

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cent. Statistics, of course, are not always reliable in detail, because they embrace the work of many different men and institutions, and are collected from all parts of the world, yet they undoubtedly give us a good cross section estimate.

It is generally conceded that the mortality from Cesarean is still too high. One of our best maternity hospitals, headed by a world famous obstetrician, reports a maternal mortality of 1.26 per cent in a series of 874 Cesareans, while a survery covering the work of several hospitals in one of our southern cities reveals a mortality of 30 per cent. C. Jeff Miller recently advanced the opinion that mortality incident to Cesarean section over the entire United States, would average from 10 per cent to 12 per cent. The high mortality rate cannot be charged to surgical technic, as such, but to the ill-advised use of a good operation in the face of contra-indications.

In the evolution of Cesarean section, the classical method came to be the one of choice, and for many years has been employed quite successfully in many cases. Its usefulness is undoubtedly limited to the elective or clean case. The high mortality has usually been the result of its misapplication. The Porro operation was devised and is still widely employed in certain frankly infected cases, and for certain other indications, which make any form of Cesarean hazardous. Between the two extremes just mentioned, there is the necessity for an operation which may be used in certain border-line cases, for instance, those in which the membranes have been ruptured for several days, vaginal examinations have been done, and labor has been prolonged.

With the afore-mentioned conditions in mind, even before the advent of aseptic surgery, some operators attempted an operation in the lower uterine segment, but this was discarded, only to be revived by Frank in 1906. Since the time of Frank, about twenty lower segment operations have been devised, and several have proven satisfactory. The longitudinal incision has been used and become popular, especially as modified by DeLee, Beck and others. These operations were devised with the idea of confining the operation to the non-contractile lower uterine segment, leaving the upper abdomen undisturbed, and the uterine wound covered by peritoneum.

Statistics generally indicate a definitely lower mortality where the lower segment operation has been employed. Greenhill recently reported 874 Cesareans done at the Chicago Lying-In Hospital, with a mortality of 1.26 per cent; 147 of his cases were classical, and carried a mortality of 4.76 per cent. In Germany, Gausman, and Anman, in a recent analysis of Cesarean sections, reported 3,554 low sections, with a mortality of 3.7 per cent, as compared to 438 classical, 308 extraperitoneal, and 120 Porro sections, with a mortality of 6 per cent each. This combined the work of 384 different operators. E. M. Hawks, from New York Nursery and Child's Hospital, recently reported 582 cases, done by eighty-three operators, and stated that the classical operation is reserved for the ideal or elective section, or one requiring unusual speed. For the questionable case he employs the lower segment; or else the extraperitoneal Latzsko method. At the New York Lying-In Hospital, Dr. Steele reports that the majority of members of the staff prefer the lower segment operation.

The occurrence of rupture in subsequent pregnancies after the lower segment operation has been much reduced, in fact, Wetterwald reported only ten instances in 3,600 cases, or .28 per cent, after the low operation. Beck recently referred to a survey made by Holland in which he investigated the history of 1,103 cases, and found that of 448 subsequent pregnancies that went to term, eighteen, or 4 per cent, suffered from rupture of the uterine scar. In view of the fact that these are not recent cases, it is assumed that few if any lower segment operations are included. It has been quite definitely established that most instances of rupture have occurred where the uterine incision was extended into the contractile portion of the uterus, and had left a weakened scar.

Recognizing the advantages of the lower segment operation, and the disadvantages of an incision extending, as was sometimes necessary, into the body of the uterus, J. Munro Kerr, of Scotland, about five years ago advanced the idea of confining the incision wholly to the lower uterine segment by means of a transverse incision. This operation has gained popularity, and has been, with modifications, extensively employed by Phaneuf, Irving, Cosgrove, Averett, Jullien and others. It is generally conceded by these men that the operation is technically easier to perform than

the longitudinal, and is more nearly in accord with the principles of physiology. Dr. S. A. Cosgrove, of Jersey City, reports that over a period of twenty months he has performed thirty-seven operations by this method, on private cases, and his only death was that of a woman who was dying of cavernous sinus thrombosis, and the Cesarean was performed to save her viable full term child. He states that from his personal experience, "the transverse type operation is preferable to the longitudinal, because only by it is one able to confine the incision in the majority of cases wholly to the lower uterine segment. There was little more hemorrhage than usual from venous varices in three cases, but this was easily controlled; in no case was the ureter or uterine artery injured." He further states that while he favors the lower segment operation, and especially the transverse type, still he considers that one type of intra-, or transperitoneal section is relatively no safer than another in frankly infected cases, and that the lower segment operation should not permit of much relaxation in our concept of the contraindications to abdominal delivery.

I became interested in the operation while resident obstetrician on the service of Dr. Cosgrove, at Jersey City Hospital. It has been my experience that the low transverse incision can be used with ease in any case beyond the seventh month of gestation, unless there is need for unusual rapidity in completing the operation. My operating time has varied from thirty-three to sixty-five minutes as compared to twenty to thirty minutes in the classical method.

The anaesthetic may be of the operator's choice, but spinal anaesthesia gives far better relaxation of the abdomen, and such marked contraction of the intestines that the whole procedure is much facilitated.

A low mid-line incision extending at least six inches above the symphysis is made. A point is then selected about one inch above the reflection of the vesical peritoneum. The peritoneum is incised transversely, the upper flap retracted for an inch, and the lower with the bladder well separated down to the vagina or at least for two inches. A Doyen retractor is placed to hold the bladder, and the uterus is then gently incised transversely, beginning in the mid-line as low as possible, and extending the tips of the incision upward. After the first niche through the uterus, I employ bandage scissors to extend the incision laterally. If the membranes are unruptured, often the head with the unruptured sac may be delivered. Immediately after the child is delivered, each angle of the wound is caught with a vulsellum forceps and a No. 2 chromic catgut suture introduced well beyond the extremity of the wound for traction and hemostasis. The placenta is now expressed, and if much bleeding ensues, a pack may be introduced to control it, or, if excessive, pituitrin is injected into the uterine body. The sutures are then placed in two rows of locked No. 2 chromic catgut, the first extending to or through the endometrium and most of the muscle, and the latter closing over the remaining muscle and fascia. The upper flap of peritoneum is then brought over the incision and tacked by a few interrupted No. 0 plain catgut sutures. The lower flap is drawn at least an inch above the margin of the upper and likewise fixed. This completes the operation insofar as the uterus is concerned, and leaves no raw surface and only three plain catgut sutures which may come in contact with the abdominal viscera. The abdomen is closed in a routine manner. The post-operative care is that usually employed in other operative cases.

The foregoing technic is indicated in cases which are considered out of the limits of safety of the classical operation,—for example, where labor has been prolonged, membranes ruptured before or soon after the onset of labor, many or questionable vaginal examinations, or in some cases attempted delivery. With a viable child I consider it far safer than a high forceps, which unquestionably threatens the life of both mother and child. It is generally believed that within twenty-four hours after operation the peritoneum is so well adhered that it offers a very strong barrier to the escape of any material, either blood or pus, into the peritoneal cavity; this is further strengthened by the double flap. Further it is safer than the classical in that the sutures are undisturbed by the normal post-partum uterine contractions, and for the same reason the scar is believed to be stronger and less apt to rupture in a subsequent pregnancy. The convalescence of these cases is smoother than the high incision, and the incidence of gas and distention is almost neglible. Several contra-indications have been offered, namely,

low implantation of the placenta or abruptio placentae. The first in my experience has made no particular difference, and the latter, while I have not encountered it, would be decided entirely by the patient's condition, as related to the element of time. Certain writers have opposed this method on the grounds that the greater vessels are endangered. This is prevented by directing the incision upward and avoiding them. If they are cut they can be easily ligated. Others have mentioned the danger of sinus hemorrhage. My experience has been that hemorrhage is far less frequent in this type, as a rule; and in the exceptional cases it is not difficult to control in the usual manner, i. e, by massage, packing, pituitrin, or sutures, as the condition may demand.

In some instances where there is troublesome bleeding from the placental site, a pack may be left in until the following day. This controls bleeding for the time being, and, further, stimulates the uterus to remain contracted. According to some obstetricians who have employed the transverse incision, much time is saved by allowing the placenta to remain in place, and be expressed into the vagina after the uterus is closed. I have seen no necessity for this, but I have observed that there is a tendency for the uterus to invert if too much traction is made in separating the placenta. My series of fifteen cases represents a variety of conditions to which this technic is applicable.

Case Reports

Age: Average 24.6, youngest 18, oldest 34.

Parity: Seven were primipara.

Five were para I.

Two were para II.

One was para VII.

Color: Eleven were white; four colored.

Previous Labor: Five had had Cesareans, four classical, and one lower segment operation.

Two had had a difficult forceps delivery.

One had had two normal deliveries.

Labor: Two were done before onset of labor. Remainder averaged 14.6 hours; the longest, 59 hours.

Membranes: Intact in ten cases; ruptured in five.

Vaginal Examinations: One case two examinations.

Diagnosis: Generally contracted pelvis five.

Relative disproportion three.

Non-engagement with tetany of uterus and ascending contraction ring two.

Chronic interstitial nephritis with hypertension and retinal changes, one.

Chronic interstitial nephritis, previous Cesarean, one.

Previous Cesarean three.

Anaesthetic: Spinal ten; ether four; spinal and ether, one.

Puerperium: Uncomplicated twelve.

Pyelitis 6th day, one.

Temperature 103 on 3rd day, subsiding with passage of blood clot, two.

Hospital Days: Shortest, ten days; longest eighteen days; average, fourteen days.

Mortality: Maternal, none; infant, one; stillborn, one.

One baby, that of a nephritic mother, died eighteen hours after birth.

One baby, that of a nephritic mother, was dead at birth, although the heart sounds were audible a short time before. The patient whose baby died had had a previous classical Cesarean; at operation the old scar was found to be ruptured,* though there had been no symptoms suggesting it.

Summary

1. Statistics indicate that the low Cesarean is safer in questionable cases, hence safer in elective cases.

2. The mortality of Cesarean section is still much too high.

3. Indications for Cesarean section should not be broadened until there is a more universal understanding of its limitations.

4. The transverse incision makes the operation technically easier.

5. It always limits the incision to the noncontractile portion, either isthmus or cervix, of the uterus, and makes rupture less likely.

6. By lessening trauma to the abdominal viscera, and by peritonealization of the incision, it offers less opportunity for postoperative ileus, adhesion, infection, etc.

7. The accompanying case reports illustrate the wide applications of this technic.

References

Beck, A. C.: Cesarean Section, Nelson's Surgery, Vol. 7, Chapter 37.

Averett, Leonard: Advantages of Kerr Cervical

*Payne, W. R.: Symptomless Rupture of the Pregnant Uterus, Medical Journal & Record, July 16, 1930.

Cesarean Section, *American Jour. Ob. and Gyn*, August, 1930.
DeCourcy, Giles: Some Recent Modification in Technique of Cesarean, *Amer. Jour. Surgery*, January, 1928.
Phaneuf, Louis E.: The Transverse Cervical Incision in the Low Cesarean Section, *Boston Med. & Surg. Jour.*, November 10, 1927.
Phaneuf, Louis E.: Some Historical Notes on Technique of Cesarean Section, *Surgery, Gynecology & Obstetrics*, December, 1928.
Kerr, J. Munro & James Henry: Conservative Cesarean Section by the Lower Uterine Segment Incision, *Surgery, Gynecology & Obstetrics*, July, 1926.
Jullien, F.: My Method of Performing the Low Cesarean Section by a Transverse Incision Through the Lower Uterine Segment, *Rev. Franc de'gynec. et d'obt.*, April, 1929.
DeLee, J. B., Nadelhoffer & Greenhill: Repeated Laparo-Trachelotomy in Ninety-one Cases Lower Cervical Cesarean, *American Journal of Obstetrics & Gynecolory*, December, 1928.
Miller, C. Jeff: A General Consideration of Cesarean Section, *Surgery, Gynecology & Obstetrics*, June, 1929.
Greenhill, J. P.: An Analysis of 874 Cervical Cesarean Sections Performed at Chicago Lying-In Hospital, *American Journal of Obstetrics & Gynecology*, May, 1930.
Hawks, E. M.: Material Mortality in 582 Abdominal Cesarean Sections, *American Journal of Obstetrics & Gynecology*, September, 1929.
DeLee, J. B.: Principles and Practice of Obstetrics—5th edition.

AN UNUSUAL IF NOT A UNIQUE OPERATION UPON THE GALL-BLADDER.*

By W. LOWNDES PEPLE, M. D., Richmond, Va.

The patient, Mary C., is a white female, unmarried, about sixty-two years of age, five feet six inches tall, weighing about 100 pounds. Her family history is negative, except that one sister died of cancer. Her past history is negative for typhoid; and, except for the diseases of childhood, she has never been in bed a day or been attended by a doctor until the present trouble began. Her menstrual history was perfectly normal and she passed the menopause about ten years ago.

Her present trouble began about twenty-five years ago when she suffered attacks of severe pain all over the upper right quadrant of the abdomen followed by soreness and tenderness. At this time there was no jaundice and very little gaseous indigestion. Several times the pain was severe enough to require morphine hypodermically. These attacks occurred off and on at irregular intervals for two years. She then began taking olive oil daily. This seemed to help her as she had no further trouble until five years ago, when she had a recurrence of the same attacks though milder in character and the pain not of sufficient severity to require the services of a doctor. These attacks again lasted off and on for about two years and again there was no jaundice. Two years ago she had a rather severe attack of acute pain in the upper right abdomen associated with fever, nausea and vomiting, and followed by severe local tenderness below the liver. The pain was so severe that it required morphine for relief. She remained in bed for a week or two during which time her pulse and heart were very weak. Again there was no jaundice accompanying the condition. She has had slight attacks since then, but they have given very little trouble until a very severe attack on September, 1930, just four months prior to admission.

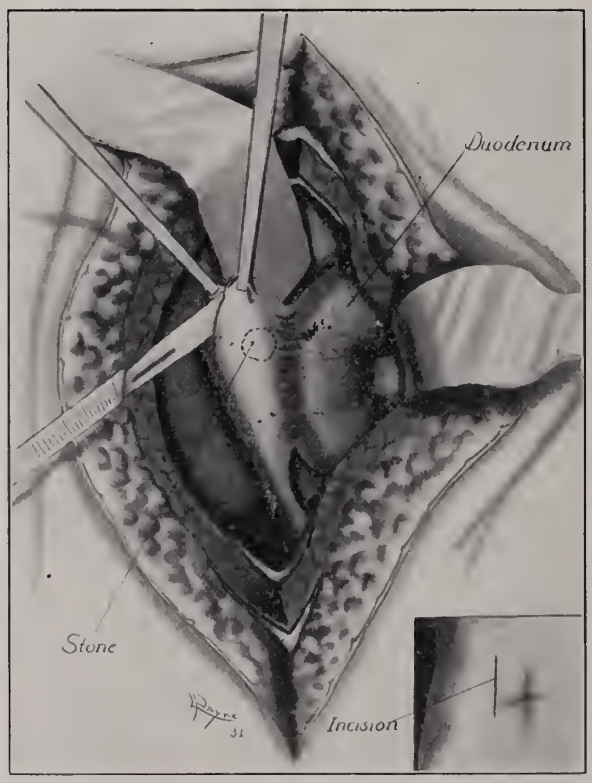

Fig. 1.—Showing gall-bladder adherent to duodenum with stone opposite adhesion.

At this time she first noticed she was slightly jaundiced and felt tired and weak upon exertion, her appetite was very poor and she suffered from headaches. She was also nauseated, with occasional vomiting spells. There was slight pain and soreness in the upper right quadrant of the abdomen, but the attacks were

*Exhibited before the Surgical Section of the Tri-State Medical Society, February 16, 1931.

never severe enough to require morphine for relief. She was given a dose of calomel after which she felt better and the jaundice cleared up a little. On November, 1930, about two months prior to admission, the jaundice began to deepen and she felt so badly she had to take to her bed. She had slight pain and soreness in the upper right abdomen with fever, chills and night sweats. Her appetite continued very poor and nausea and vomiting were very troublesome.

She was admitted to St. Luke's Hospital, January 15, 1931, having been in bed for almost two months and getting gradually weaker and losing weight. The jaundice is now pronounced and she is of a deep yellowish green color. Her stools are almost white and seem to contain no bile at all. Her temperature is 99°, pulse 80, and respiration 18. She looks weak and undernourished. The sclera is a deep yellow and the mucous membrane of the mouth has a yellowish tinge. Examination of her chest is negative. Her heart shows no gross abnormality. Blood pressure is 125/80, and arteries seem somewhat thickened. On examining the abdomen there is definite tenderness and slight rigidity in the right quadrant and mid-epigastrium. The smooth liver edge is about three fingers' breadth below the costal margin. No masses are felt and the kidneys are not palpable. Her knee jerks and reflexes of elbows are normally active and equal. There is no edema about the extremities.

Examination of her blood shows 3,710,000 red cells with 61 per cent hemoglobin; 9,700 leucocytes with 83 per cent polynuclears. The blood Wassermann is negative. The non-protein nitrogen is 36 milligrams per 100 c.c. Sugar is 150 milligrams per 100 c.c. Bile index 200. The coagulation time is fourteen minutes. The urine shows abundant albumin, abundant bile, a few leucocytes and coarsely granular casts. The stools are putty colored, and show no ova. The guaiac test reacts faintly for blood. A flat X-ray film of the abdomen shows no opaque gall-stones but a shadow which resembles the gall-bladder. Dr. Tabb's note here is: "The visualizing of the gall-bladder on a flat film is indicative of a thickened pathological gall-bladder." X-ray examination of the chest is negative for tuberculosis or evidence of fluid, pleural thickening or malignancy.

The clinical picture presented with the slow onset of jaundice following gall-stone attacks over a period of twenty-five years would certainly suggest malignancy. In spite of the fact that she had moderate fever and moderate leucocytosis with a high polynuclear count, it was thought that she probably had cancer either of the liver or bile ducts. However, it was unusual for a cancer large enough to produce jaundice not to be palpable in so thin a woman after five months. As the condition was growing steadily worse, an exploratory operation was decided on with a view to diverting the bile into the intestinal tract and at least relieving her of her jaundice.

On January 26th, under light general anesthesia, a right upper rectus incision was made revealing a small contracted gall-bladder buried in adhesions with only its dome showing. Many adhesions were separated until the common duct could be palpated. This was as large as one's index finger and of firm consistency like a mass of inflammatory tissue. It did not have the feel of a string of beads as though stones were lying in the lumen. The head of the pancreas was large and somewhat hard. There was a stone about one-eighth inch in diameter which was tightly imbedded in the gall-bladder in its upper third, and opposite to this point was an area of dense adhesions to the duodenum about three-quarters inch in length and one-half to three-quarters inch in breadth. Evidently, nature was trying to effect an artificial opening into the duodenum at this point. The gall-bladder in the beginning was noted as being too small to fit the half of a Murphy button and too much thickened to lend itself to proper suturing. The fundus of the gall-bladder was opened with a knife and the gall-stone removed with forceps. The knife was then inserted through the wound into the gall-bladder; and, as the assistant spread out the duodenum, a stab wound was made from the inside of the gall-bladder through the area of adhesions into the duodenum. A curved forcep was then passed into the duodenum and the fistula widened. The fundus of the gall-bladder was then sewed up and covered over with omentum. In this way I completed a cholecystenterostomy which nature was endeavoring to perform. There was little bile in the gall-bladder but I demonstrated its patency down to the common duct.

The abdominal wound was closed without drainage, and the patient made a rapid and

uneventful recovery. The time of operation, twenty minutes, was so short and the trauma so slight that she had little or no post-operative discomfort. The nausea stopped at once and bile appeared in the stools in a few days. When she left the hospital on February 24th her jaundice had almost disappeared and she was rapidly gaining in weight and strength.

Fig. 2.—Gall-bladder opened near its summit and scalpel introduced through the incision making the opening into the duodenum through the area of adhesions.

I am inclined to think the case is one of intractable jaundice due to stones in the common duct, as no evidence of a cancerous growth could be found at operation. Should symptoms arise from an infected common duct or should the pain return, one could go in again and remove the stones or even the common duct itself with impunity.

I report this case somewhat in detail, not only because the operation was new to me but because of its simplicity in relieving this feeble, jaundiced old woman of a well nigh fatal illness. Should anyone setting out to do an anastomosis of the gall-bladder to the bowel encounter so fortuitous a patch of adhesions, I would remind him of the happy outcome of this case lest he impetuously separate them without recognizing their infinite value.

SOME FUNDAMENTALS IN THE EXTRACTION OF TEETH.*

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The celebrated Greek physician, Aesculapius, who lived in the twelfth century, B. C., is referred to as the God of Medicine. History records the tradition that dental surgery also had its origin with Aesculapius. We later learn from Hippocrates (460 B. C.) that "In cases of toothache, if the tooth is decayed and loose it must be extracted, if it is neither decayed nor loose, but still painful, it is necessary to desiccate it by cauterizing."[1] We understand from this that only loose teeth were removed and that Hippocrates considered such a procedure a simple one, for in one of his books he said: "These are the instruments necessary to the doctor's operating room and in the handling of which the disciple should be exercised; as to the pincus for pulling out teeth, anyone can handle them, because evidently the manner in which they are to be used is simple."[2]

Fig. 1.—Completely impacted mandibular third molar.

Through ancient and medieval history we may find many similar references. We also learn of peculiar methods by which teeth may be made to fall out. John Gaddesden, an English doctor of the fourteenth century, wrote that a tooth would fall out if anointed with the fat of a green frog.[3] He also added that "The brain of a partridge applied to a carious tooth makes it fall in pieces."[4]

This evolution in dentistry has continued to such a point that the practice of dentistry is subdivided into numerous specialties. The practice of exodontia is one which commands the attention of every general practitioner. The extraction of teeth is a surgical procedure,

*Read at meeting of Fourth District Dental Society of North Carolina, Raleigh, N. C., November 25, 1930.

and one which is performed, perhaps, more frequently than any other surgical operation. Because of its frequency and daily occurrence, its importance is sometimes minimized.

There are many phases of exodontia which might be considered but it is the purpose of this paper to discuss briefly some of the problems which we commonly encounter in a routine practice. Dr. Chapin A. Harris in his book on "The Principles and Practice of Dental Surgery," written in 1866, said "There are few operations in surgery that excite strange feelings of dread, and to which most persons submit with more reluctance, than the extraction of a tooth, . . . But when performed by a skillful hand and with a suitable instrument, the operation is always safe, and in a large majority of the cases may be effected with ease."[5]

Fig. 2.—Impacted mandibular third molar. Area of structural change between the second and third molars indicative of pathology.

Diagnosis

It is unnecessary to discuss here the indications and contraindications for extractions. These facts are fairly well established and we all have certain convictions. It is sufficient to state that it is important that a complete diagnosis be made before proceeding with any operation. A careful clinical study of the patient should be made and in most cases a thorough X-ray examination should supplement the clinical findings. In view of the many anomalies commonly seen and because of the variation in teeth and supporting structures, a complete X-ray study becomes even more imperative.

Preoperative Care

There are many cases which are simple and require little preparation for a successful operation and satisfactory prognosis. Nevertheless, the longer one is engaged in this field the more concerned he is about the possible outcome because of the many complications which sometimes arise. Every case must be considered in the light of this knowledge and viewed with caution and much care. A complete diagnosis must include a satisfactory study of the shape and size of the tooth or teeth in question and the adjacent teeth and supporting structures. All removable appliances, etc., must be taken from the mouth. Calculus and other debris in the field of operation should be removed. Because the mouth cannot be rendered entirely aseptic does not preclude the necessity of a general cleansing to enhance the chances of sterilization.

Fig. 3.—Impacted maxillary third molar.

The common acute abscess is a condition frequently encountered in a routine practice. Acute abscesses may be the result of a variety of causes. In some cases, particularly where the general health of the patient is also involved, remedial measures may be resorted to rather than extraction. In routine cases, however, extraction is not only immediately indicated, but imperative in order to provide free drainage and relief from pain. Curettement in these cases is contraindicated.

Another condition frequently presented is infections associated with erupting and impacted third molars. It is preferable to treat these infected areas before operating, for better results are obtained if acute symptoms are allayed. The same precaution should be exercised in cases of Vincent's infection.

Operative Procedures

It is needless to remind you of the necessity for having all the armamentarium sterile and, as I have indicated above, the field of operation as clean as possible. The instruments of choice should be those which the operator has found to be most efficient in his own experiences as various methods are used by different operators to obtain the same results. One important factor to be observed is that there should be as little trauma as possible and that the utmost care be exercised in handling the supporting and surrounding tissues.

There are cases in which it is necessary to remove considerable osseous structure to permit a satisfactory delivery of the tooth or teeth. It is also important to trim the bony edges and smooth the alveolus and this must be done with care and with as little interference as possible with the physiologic process.

In our present-day practice we see many more ill patients than formerly. Patients are referred to the dentist for the removal of teeth which may be a possible focus of infection. It

Fig. 4.—Roentgenogram shows completely impacted right and left maxillary cuspid teeth.

is important in these cases to understand from the physician the extent of surgical interference to which the patient may be subjected. There are some acute medical cases in which it would be very undesirable to institute any surgical dental procedures. The cooperation of the medical attendant is imperative as the patient's health must be safeguarded.

Postoperative Treatment

Postoperative care may be divided into two main divisions; local and general.[6] Local postoperative treatment of mouth wounds should consist of simple non-traumatizing procedures. Advise the patient not to wash or rinse the mouth for at least the first twelve hours. This may be more indelibly impressed immediately after the operation has been completed by not permitting the patient to wash his mouth while in the office. Explain to him that the less the wound is disturbed by too vigorous washing, which often causes the loss of the blood-clot, the less bleeding there will be, and therefore the quicker and better the recovery. When excessive saliva apparently interferes with healing, atropin may be advisedly used to advantage. As a rule, the external application of ice compresses is ordered not only for the relief of pain but also because the cold tends to lessen edema and allays the inflammation, thereby reducing the heat necessary for the proliferation of bacteria. There should be no further local attention to the wound itself after the operation has been completed, unless this is warranted by conditions which may arise.

Under general care, patients should be advised to rest the parts operated on as far as practicable, while rest of the patient is likewise conducive to hastening recovery. Laxatives may be prescribed in order to facilitate proper elimination. A light diet, with more than the normal amount of fluid intake, is advised. For the relief of pain, sedatives are prescribed. Milder remedies are, of course, first used; if these do not suffice, narcotics may be necessary.

Regardless of the simplicity or gravity of the operation, the patient should be seen on the first, second or third day, this depending on the nature of the case, if not for treatment, at least for observation. If the wound looks satisfactory, nothing is done to disturb the healing process. The practice of continually disturbing a wound with instrumentation or with strong drugs cannot be too severely condemned.

Every case should receive the same attention in postoperative care as in the performance of the original operation itself,—care which is not to be relaxed until the operator is satisfied and the patient discharged.

References

1. 2, 3, 4: Guerini, V.: History of Dentistry, pp. 51-141.
5. Harris, C. A.: Principles and Practice of Dental Surgery, p. 355.
6. Bear, Harry: Postoperative Treatment, *Journal of the A. D. A.*, September, 1928.

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RETROGRADE INTUSSUSCEPTION.*

By HERBERT H. SCHOENFELD, M. D., F. A. C. S.,
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Intussusception is probably the most common of the acute, obstructive conditions in children. It occurs only rarely in adults and is most frequently seen in infants. The condition gives a high mortality and requires prompt recognition and treatment.

The condition consists of an invagination of one segment of the intestine into another, most

*Read before The George M. Kober Medical Society of Washington, November 10, 1930.

commonly occurring in a descending fashion. The so-called ascending intussusception is extremely rare, being only briefly mentioned in Kelly's "Surgical Diseases of Children," as well as in Holt's "Diseases of Children." In Kelly's "Surgical Diseases of Children," in a series of 183 cases of intussusception, no ascending or retrograde intussusception was reported, while in Holt's series of 162 cases, no ascending cases are reported either.

The condition may involve only the small intestine or large intestine, or may arise in the small and large intestine together. The latter type is the more frequent, the site of the invagination most frequently being at the ileocecal junction. Only very rarely are multiple intussusceptions reported. By way of parenthesis, it should be stated that intussusceptions occur occasionally during the state of dissolution, at or near death, and these are occasionally found at autopsies. These intussusceptions, occurring in the moribund state, are naturally of no clinical importance.

Animal experimentation has demonstrated the mechanics of intussusception. Intussusception can be readily produced in dogs by stimulation of the intestines with an electric current. Such stimulation causes a contraction of the irritated segment, which becomes white and hard in its contraction and the segment below it swallows or creeps up upon the narrowed contracted area. With the invagination, the mesentery of the gut is to a greater or lesser degree constricted and the blood supply interfered with, so that the gradual oedema of the invaginated portion occurs and the peritoneal surfaces, which are opposed within the intussusception, become inflamed and glued together. The oedema gradually produces a complete obstruction of intestinal flow and gangrene of the intussusceptum may occur.

Among the etiological factors of intussusception, we find the condition occurring much more frequently in males than in females, in a ratio of about two to one. It occasionally follows enterocolitis, and is not infrequently seen during the summer months in association with the infectious diarrhoeas. New growths, especially polyps of the intestines, are occasionally seen as causative factors. Meckel's diverticulum and other anomalies of the gut may also occasionally be factors. Appendiceal pathology and foreign bodies are also considered as causes. I have seen a polyp in the ileum and Meckel's diverticulum, each present in one instance, while the remainder, of about twenty cases which I have seen, have had no evident factor of the types mentioned.

Intussusception may be acute, subacute, or chronic in type, the arbitrary division of these cases being dependent upon the duration of the picture. Very occasionally, recurrent intussusception occurs, which spontaneously rectifies itself and frequently re-occurs.

Fig. 1.—Shows accumulation of gas in bowel, proximal to obstruction. Note absence of gas in pelvic colon.

The acute intussusception presents a clinical picture which is striking and on which a diagnosis can frequently be made on the history alone. The symptoms are apparently acute. There is sudden onset of pain which is paroxysmal in character, occasionally awakening an infant from a sound sleep, allowing the child within a few minutes to fall asleep again, and to be suddenly reawakened, the child crying and being extremely restless during the paroxysms. Associated with the paroxysms, bowel movements occur, which at first have a definite fecal contest, later stools being of blood, serum, and mucus. Gas is frequently passed for several hours more than fecal content. Vomiting may or may not occur until relatively late in the course of the disease. Such vomitus at first may consist only of stom-

ach contents and mucus. Later, as with other obstructions, it may be blood-stained and fecal in character.

The diagnosis is usually confirmed by the ready palpation of a tumor mass, which is more or less sausage-shaped and boggy in consistency. It may be felt in any part of the abdomen. Digital examination of the rectum is a very important mode of investigation by which the intussusception can be felt against the tip of the examining finger, occasionally, except for its relative softness, giving the exact sensation of the os uteri.

In recent years I have examined a number of these cases fluoroscopically with barium enemata. It is stated that intussusception may occasionally be reduced with enemata. I, personally, have never seen this accomplished, but, granting that it is possible to accomplish, I should prefer to be sure of relief under my sight. Certainly such visual examination is of definite diagnostic use.

The X-ray plates show the barium enema definitely stopped at the sigmoid, and great pressure of the enema did not elevate the point of obstruction in this case. (Another plate is of interest in showing the large amount of gas trapped in the large intestine, particularly in the cecal and ascending colon areas.)

Operation in these cases should be performed promptly even though the tumor of the intussusception may occasionally be so small that it cannot be felt or distention may be so great as to preclude its finding when present.

The history and symptoms make the diagnosis, and even when the condition is apparently relieved by enemata, laparotomy should be performed to assure complete relief, and to remove any etiological factor that is amenable to surgical treatment.

The case that I wish to report is that of a colored female child, four months of age, who was admitted to the Children's Hospital at about 7:15 A. M., on October 25, 1930. The mother gave a history of the child having had a slight cough and some nasal discharge for about two weeks. The evening before admission, on October 24th, at about nine o'clock, the child began to vomit. The vomiting continued throughout the night about every hour, and on the morning of admission the frequency increased to about every half hour. The vomitus at first was of stomach contents with milk, and later became biliary in type. The child's bowels moved well at about eight o'clock on the evening of the 24th, and beginning about five A. M., bloody stools were passed at intervals up until the time of admission.

Examination on admission demonstrated some evidence of pathology in the base of the left lung where the breath sounds were altered. There was also some injection of the ear-drums and congestion of the pharynx, and on abdominal examination a definite mass was felt running longitudinally on the left of the midline of the abdomen, from just above the umbilicus to the pubis.

Fig. 2.—Shows bowel, distal to obstruction, filled with barium enema.

The child was removed to the X-ray department, where a barium enema was given after the flat plate had already been taken. This enema went up as far as the junction of the sigmoid with the descending colon and could not be pushed further. The tumor mass could be felt above the obstructed point.

Laparotomy was immediately performed, a right rectus incision being made, the mass being delivered and found to be an intussusception. The interesting part of the finding was that the intussusception consisted of an invagination of the sigmoid up into the descending colon to the level of the splenic flexure. The intussusception was easily reduced, the ab-

domen being closed in layers. The actual operative procedure consumed about twenty-five minutes. Further exploration of the abdomen in this case was not made because of the risk involved in continued anesthesia and manipulation.

Only a few hours later the child was seen by Dr. C. A. Schutz, the attending pediatrician, who found slight increase of the voice sounds over the left base posteriorly; the heart in good condition; a rhino-pharyngitis was present; both ear-drums showed pathology which required myringotomy. The dietary control of this patient was also outlined by the pediatrician and salt solution was given subcutaneously at intervals.

The child apparently did well for about forty-eight hours, though there was sharp afternoon rise in temperature to about 104°. On October 27th, the child appeared to be more prostrated and the heart rate became very rapid though the sounds were of good quality. The bilateral otitis had apparently subsided, but the pulmonary findings were increased in amount and distribution. The respiration was of the grunting type and dilatation of the nares was present. The infant died just before midnight on October 27th with a hyperpyrexia.

An autopsy was performed at the hospital by Dr. J. W. Lindsay on the following morning. The positive findings of this well-developed, well-nourished baby, whose weight was eleven pounds, twelve ounces, were:

1. Pulmonary congestion with bronchopneumonia.
2. Oedema and congestion of the large intestine, particularly in the cecal area.
3. Post-operative incision of the abdominal wall, which was clean and of normal appearance.

The interesting point in this case is that the condition was one of an ascending intussusception, which is very rarely seen.

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A DISCUSSION OF THE PREVENTION OF FOETAL AND MATERNAL MORTALITY.*

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From the Department of Obstetrics, Medical College of Virginia.

As in other departments of medicine, one's work in obstetrics is in the final analysis a question of mortality and morbidity. We are, therefore, vitally concerned with those conditions which are essentially responsible for these sequelae.

S. Josephine Baker says that in the death registration area in the United States during the year 1921, more than 40 per cent of all maternal deaths were due to puerperal infection. Of the maternal deaths, 27 per cent were due to puerperal albuminuria and convulsions, and 10 per cent to instrumental delivery and surgical procedures, including Caesarean section. The remaining 23 per cent were due to the so-called accidents of pregnancy, including abortion, ectopic pregnancy, puerperal hemorrhage (placenta previa and abruptio placenta), embolus and phlebitis.

Mac Murchay states the maternal mortality in Canada for one year was six per thousand living birth, 1,532 deaths. Sepsis caused death in 418 cases, hemorrhage in 357 cases, and toxemia of pregnancy in 344 cases.

According to Litzenburg, the two principal causes of maternal mortality are sepsis and eclampsia. In 1925 there were in this country 17,190 puerperal deaths, of which 11,180 were due to sepsis and toxemia.

The same author (Litzenburg) says that prematurity increased 10 per cent from 1915 to 1925, causing 53,800 foetal deaths in 1925. Litzenburg's figures also showed a great increase in baby deaths from birth injuries during the same period, namely, from 8,835 in 1915 to 11,652 in 1925, an increase of 14.8 per cent, which shows the effect of interference by induced labors, forceps, versions, and operative procedures.

The successful culmination of an obstetrical case will depend upon three main factors:

First.—Careful and persistent prenatal care.

Second.—Intelligent and skillful management during labor.

Third.—Conscientious postnatal treatment and follow-up.

Prenatal Care: One of the outstanding accomplishments here is the prevention of prematurity, still-births and deaths during the first weeks of life, emphasized by the figures of Litzenburg. Hearty cooperation between the physician and patient is essential. A complete examination and a well-kept record enables the physician to treat the case intelligently and inspires in the patient a greater confidence.

*Read by invitation before the Clinch Valley Medical Society, September 20, 1930.

The importance of the history cannot be overstressed.

Infectious diseases often leave a patient with some permanent damage. A history of scarlet fever may mean a damaged kidney, or rheumatic fever a damaged heart. Mental diseases and tuberculosis demand careful study and frequently cause us to alter our treatment of specific cases.

The record of previous labors will sometimes give us information that will prevent the recurrence of a mistake made in a former delivery. The menstrual history is also important.

Physical examination, including pelvic examination and pelivimetry, a study of the height, and bony conformation of the patient, are necessary for us to estimate the risk of child-birth for a particular patient. Short, stout women frequently have prolonged labors and require operative interference. Patients with cardiac disease, and those with nephritis should have their labors abbreviated as much as is consistent with the welfare of both mother and baby. The second stage should be shortened when the surroundings, training, and equipment of the accoucher justify interference.

A certain percentage of these cases cannot stand the strain of even a short labor, and a Caesarean section under local or spinal anaesthesia before the onset of labor will save many lives in properly selected cases.

A definite percentage of the toxemias of pregnancy are secondary to focal infections in the teeth, tonsils, kidneys, and elsewhere in the body. The early removal of infected tonsils and teeth, and the treatment of infections in the mouth, throat, and other parts of the body will reduce the incidence of toxemias and secondary infections. All cavities in teeth that can be saved should be filled early in pregnancy.

Careful pelvimetry will enable the physician to classify his patients, and study more closely the border-line cases. Neglect in these cases accounts for much of the morbidity and mortality of obstetrics. Eliminating the patients with absolute contractions of the pelvis, because their treatment is simple, we must study carefully the border-line cases. Their final result depends on the type of patient, race, and physical condition, the size and position of the baby, the condition of the cervix and maternal soft parts, and the type of labor pains, as well as the bony pelvis.

During our routine pelvic examination of patients the speculum examination frequently reveals an eroded or diseased cervix which can be treated by local applications and cured or much improved before the onset of labor. Patients should be educated and encouraged to come to the physician as soon as pregnancy is suspected, and a careful and complete examination should be made at that time. During the first six months of pregnancy a patient should see her doctor at least once a month, during the next two months, at least every fourteen days, and during the last month, once each week. More frequent visits must be made in complicated cases. We make a second complete examination of our patients at the beginning of the eighth month, and re-check the measurements. No vaginal examinations are made after the eighth month. At each visit the blood pressure and weight are recorded. A specimen of urine is examined and a careful inquiry into her general condition is made. The diet should be regulated according to each patient's needs. Any tendency to constipation must be overcome. This can usually be accomplished by proper diet or the administration of mineral oil, one ounce daily.

What Prenatal Care Accomplishes: Toxemias of pregnancy can be greatly reduced. Better babies are developed by giving the mother a balanced diet and advising against excess in any item of food. The presentation and position of the baby can be determined and usually the size of the baby can be closely estimated.

Management During Labor: The function of the obstetrician is

First.—To deliver the woman of a healthy living child with the minimum of injury to her general condition and the least trauma to her generative organs.

Second.—To leave her in such physical condition that she may be an economic asset to her family and the community.

Preparation of the Patient for Labor: The obstetrician should note the progress of the labor by careful abdominal and rectal examinations. Vaginal examinations are seldom necessary and greatly increase the danger of infection of the genital tract. Rectal examinations enable the physician to note the dilatation of the cervix, the presence and amount

of forewater, and the level of the presenting part. The position and rate of the foetal heart should be watched closely, also the frequency and duration of the uterine contractions.

Preservation of the membranes during the first stage of labor reduces the trauma to the foetal head and enables the cervix to dilate normally, thus reducing the incidence of lacerations of the cervix and the danger of intracranial hemorrhage to the newborn.

Obstetrical patients should be kept as comfortable as is possible during labor. This includes a comfortable bed, and the avoidance of unnecessary exposure. The patient should have fluids freely and a soft or liquid diet depending on the estimated time before delivery.

Much progress has been made in the relief of pain for the woman in labor. Some physicians have probably relieved the suffering during labor at the expense of the mother's health in after years and at other times have sacrificed the baby. Many other physicians have neglected to give the expectant mothers even the slightest relief. The administration of the various drugs for the control of pain must be managed intelligently to obtain good results. We use morphine in doses of 1/6 or ¼ grain frequently when the patient is suffering with good contractions at two to three minute intervals and lasting forty to sixty seconds, with the cervix dilated two to three fingers. This will relieve the severity of the pain and seldom slows the labor. Depending upon the effect of the opiate, one to two hours after the administration of the hypodermic of morphine, rectal analgesia (The N. Y. Lying-In formula) is given the patient. This usually effects considerable relief until the head is almost ready to deliver. In the hospital a little nitrous oxide and oxygen anaesthesia should be used for the delivery of the baby. In the home, ether by the open drop method is the safest anaesthetic.

At the onset of labor pains, in cases of the border-line type, where the presenting part is floating, the adaptation of the head to the pelvis gives valuable information. When pressure is made on the fundus of the uterus or the baby's head, if the head can be pushed in the pelvis, the inlet is probably ample. If the vertex over-rides the symphysis, the disproportion is probably considerable, and delivery from below doubtful. This is of particular value in estimating what a patient can do with her first labor.

Second Stage: When the presenting part has passed through the cervix and internal rotation has taken place, delay on the distended and stretched soft structures produces fascial stretching and a resulting relaxation.

Progressive advance with mother and foetus in good condition should never be interfered with. Prolonged arrest produces retarded circulation to the tissues, over-stretching and relaxation, diminishes tissue resistance, and invites infection. Arrest should be relieved by appropriate and timely interference. Prolonged stretching of the perineal fascia, and muscles in excessive rigidity, causes edema and trauma, favors laceration, and results in poor healing and unfavorable surgical repair. Perineotomy in such cases of inelasticity of the soft structures is sound in surgical principle and gives admirable results when properly done.

Traumatic wounds everywhere heal with difficulty and are prone to infection; the perineum is no exception. One has only to practice perineotomy in well selected cases to be convinced of the end-results when correctly repaired.

Median and lateral incisions both have their advantages, and should be adopted according to the varying diameters of the pelvic outlet, the size of the baby's head, and the degree of rigidity of the pelvic muscles and fascia.

It has been shown that the instillation in the vagina during labor of a solution of mercurochrome 2 per cent with acetone and alcohol has reduced the maternal morbidity, and we now use one ounce of this solution routinely before delivery.

Because of the general scope of this paper and the limited time, I will not go into any detail concerning the technique of perineorrhaphies. We usually close the vaginal mucosa first, using number 1 chromic catgut. Next, we repair the muscle and fascia with interrupted sutures of number 1 chromic catgut, and, last, the skin of the perineum with silkworm, interrupted or subcuticular. Lead shot are mashed on the end of these sutures to prevent them from pricking the patient and to facilitate removal, which is usually done on the seventh day post-operative.

Postnatal Care: This begins immediately upon delivery of the baby. Control of bleed-

ing is important because anemic patients recover slowly and are always more subject to infections.

Pituitrin, ½ to 1 c.c., may be given to stimulate contraction of the uterus. The fundus should be held, but sufficient time should be given for the formation of the retro-placental blood clot and separation of the placenta. Rough massaging of the uterus must be avoided. When the placenta has separated, the fundus is grasped and pushed backward to straighten out the utero-vaginal angle. Gentle pressure is now made on the fundus and the placenta expelled.

Many cases of post-partum hemorrhage can be controlled by placing the left hand on the anterior abdominal wall and making pressure just above the symphysis with the fingers, while the right hand grasps the uterus from above and brings it forward and against the fingers of the left hand. When the uterus remains flabby and continues to bleed, intra-uterine packing frequently saves life. The advisability of the packing depends upon the amount of blood lost by the patient and the surroundings the physician is working in.

Bleeding that occurs after firm contraction of the fundus demands inspection of the cervix. Lacerations of the cervix should be repaired immediately where assistance is available and surgical technique can be carried out. We usually use interrupted sutures of number 2 chromic catgut.

Lacerations of the perineum and vaginal sulci should be repaired immediately, as stated under episiotomes and perineorrhaphies.

Fluid extract of ergot, drams ½, three times daily for three to four days, will stimulate contraction of the uterus and favor involution. Gynergen has the same therapeutic effect. Nursing the infant also stimulates uterine contraction and involution. Involution may also be hastened by the application of an ice-cap to the lower abdomen. Intra-uterine douches or internal manipulation of any kind must be strictly avoided.

Immediate repair of lacerations of the cervix, vagina, and perineum and the stimulation of firm contraction of the uterus are important factors in keeping up resistance and preventing infection.

Resuscitation of the baby should never be rough. Hold the baby up by his feet, drain the mucus from his mouth, nose, and throat, and keep him warm.

We elevate the head of the bed eight inches immediately after delivery, and have the patient rest flat on her abdomen twice daily for one hour after the first day. This brings the uterus forward, increases the circulation, and facilitates drainage. After the tenth day the patient adopts the knee-chest posture for fifteen minutes twice daily. Other exercises should be given to increase the tone of the muscles of the anterior abdominal wall.

Engorged breasts are treated by a tight binder and ice-caps. Occasionally we use an electric pump or hand pump. The baby should not be taken off the breast unless the nipples are sore.

All patients should be examined four weeks post-partum. Erosions of the cervix should be treated with silver nitrate 10 per cent. Those that do not respond to this treatment can be cauterized in the office with an electric cautery.

Retroversions are frequent and can usually be corrected at the end of four weeks after delivery. The uterus should be kept in place by the introduction of a vaginal pessary, which can be removed after the patient has worn it two to six weeks. The after-care of obstetrical cases is of paramount importance, and no patient should be discharged until her condition is thoroughly satisfactory.

In closing, I would like to emphasize three points:

First.—Our medical schools must develop doctors who are better trained in practical obstetrics.

Second.—Our doctors must educate the patients and show them the value of prenatal and postnatal care.

Third.—We must avoid operative interference in obstetrical cases that are progressing normally, and not try to deliver our eclamptic cases too rapidly.

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MENINGITIS CAUSED BY BACTERIUM AEROGENES.

By FREDERICK W. SHAW, M. D., Richmond, Va.
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Meningitis due to members of the colon group is a very rare disease. Neal,[1] reviewing more than 1,500 cases of meningitis, found but seven due to members of this group, and an eighth due to several microorganisms, one of which belonged to the colon group. Of this

number two cases were due to bacterium aerogenes (aerobacter aerogenes): one reported by Beitzke[2] in 1904, and one by Kolle and Wassermann,[3] 1913.

In 1928, Deane and Shera[4] reported a case of meningitis due to bacterium lactis aerogenes (aerobacter aerogenes). The patient was a woman aged 71 years, who was admitted to the hospital on account of vomiting and pyrexia. A week previously she had had a rigor, with a temperature of 102° F. Since then she had been vomiting frequently. On admission her temperature was 101° F., pulse rate 132, and respiration 40. She seemed lethargic and very tired, and complained of persistent vomiting and feeling very weak. There was no abdominal pain, tenderness or rigidity, nor any palpable tumor. There were moist rales at the bases of both lungs. The next day she was in a state of low delirium, and on the following day at noon had a rigor (101° F.), became deeply comatose, and lay curled up on her side in bed with her head forward. Moist rales became more numerous over the chest, and blood stained pus began to flow from the nose. She died in the afternoon. At post-mortem, stained slide preparations from the meningeal pus showed many gram-negative encapsulated bacilli. This microorganism was classified by cultural methods as bacterium lactis aerogenes (A. aerogenes).

In 1929, the writer isolated bacterium aerogenes from the spinal fluid of the following case: A. C., age 3 years, female, colored, admitted to St. Philip Hospital, August 12, 1929.

The patient, having been playing in the yard, went into the house complaining that she was sleepy. She laid down and went to sleep. After sleeping for two or three hours, she awakened, very fretful and shaking as though with a chill. She appeared to be very nervous. On the night of August 10th, she had a high fever, vomited at intervals throughout the night and asked for water every few minutes. The next day (August 11th) she was very irrational, screamed with pain, had a rapid respiratory rate and an occasional cough. The patient slept at intervals during the night, but was restless most of the time and complained of pain in the neck and back. The fever appeared to rise during the night.

On admission, examination showed a very sick, irritable child, with congestion of the throat and a slight stiffness of the neck and spine. The lower extremities were not stiff, and Kernig's sign was negative. The abdomen was tender and somewhat rigid. The temperature was 103° F.

A spinal puncture was performed on the 13th. The spinal fluid was very cloudy. There were 1,300 cells present, of which 91 per cent were polymorphonuclear leucocytes and 9 per cent were lymphocytes. The specific gravity was 1.027. A heavy trace of globulin was present. There were 20 mgms. of dextrose. The mastic was 4-4-4-1-0. Stained slide preparations of the sediment showed a gram-negative, encapsulated bacillus. Examination of wet, unstained preparations of the sediment showed a non-motile organism.

On August 17th, the cell count was 3,600. On the 19th, the dextrose was 25 mgms., and on the 22nd the dextrose had fallen to 10 mgms. Spinal fluid removed on the 24th was very thick, with ropy pus.

The blood count on the 15th was hemoglobin 80 per cent, erythrocytes 4,100,000, leucocytes 11,200, of which 86 per cent were polynuclears and 14 per cent lymphocytes.

The urine was negative, except for a trace of albumin.

	Gram	Motility	Gelatin	Serum	Indol	V.-P.	Milk	Dextrose	Lactose	Mannite	Salicin	Saccharose	Maltose	Dulcite	Glycerol	Inositol	Adonitol
A. aerogenes (Deane and Shera)	o	o	o	o	o	+	AC	AG	AG	AG	AG	AG	AG	o	..	..	..
B. pneumoniae (5)	o	o	o	o	o	o	AC	AG	AG	AG	AG	AG	AG	AG	..	..	AG
A. aerogenes (5)	o	o	o	o	o	+	AC	AG	AG	AG	AG	AG	AG	o	..	AG	AG
A. aerogenes (This patient)	o	o	o	o	o	+	AC	AG	AG	AG	AG	AG	AG	o	AG	AG	AG
B. acidi lactici (5)	o	o	o	o	+	o	AC	AG	AG	AG	o	o	AG	o	..	o	AG

o = no reaction; AC = acid and coagulated; V.-P. = Voges-Proskauer; AG = acid and gas; + = positive.

After admission the temperature dropped to 100° F., where it remained until death, which occurred on August 25th.

The gram-negative encapsulated bacillus was isolated from the spinal fluid on the 13th,

19th, 21st and 24th. With the exception of a contamination of the fluid on the 19th, this was the only organism present.

The bacillus grew on eosin-methylene blue with the pink, profuse, mucoid growth of B. aerogenes. The reactions in the various mediums are shown in the table.

Neal (1. c.) cites a few cases of meningitis due to Freidlander's bacillus (B. pneumoniae). It is quite possible that some of these may have been B. aerogenes, as opinions in the different geographical locations do not agree as to the identity of B. aerogenes and B. pneumoniae (Freidlander's).

TABLE

Showing cultural reactions of B. aerogenes and closely related bacteria.

B. aerogenes differs from B. acidi lactici in fermenting inosite, salicin and saccharose, and is V.-P. positive; it differs from B. pneumoniae in not fermenting dulcite and in being V.-P. positive.

REFERENCES

1. Neal: *Amer. Jour. Med. Sc.*, 172, 740, 1926.
2. Beitzke: *Cent. fur Bact.*, 37, 496, 1904.
3. Kolle and Wassermann: *Handbuch der path. micro.*, Vol. 6,539, 1913.
4. Deane and Shera: *Lancet*, 2, 1237, 1928.
5. Hewlett: A Manual of Bacteriology, 450-454, 1921.

HYPERIDROSIS.

By J. B. H. WARING, M. D., Cincinnati, Ohio.

A professional colleague, who had been bobbyjonesing around quite extensively during the heated summer period, asked me informally to take a look at his feet. Excessive sweating of a perhaps highly acid sweat about the feet, with evaporation retarded by stockings and heavy leather golf shoes, resulted in an inflamed, eczema-like condition about the feet and especially on and between the toes; perhaps intertrigo would be more correct technically speaking. This was aggravated by several angry-looking pustules over dorsum of toes; in other words, the ever-present staphylococcus had taken advantage of favorable conditions to go into action on its own account. Take a diabetic, or a greatly debilitated person, and we had the ground work laid for an explosion of some violence. Careful cleansing, followed by soothing antiseptic lotions rapidly cleared up the condition in the instant case; but the incident emphasized the value of prophylactic care of the feet under all conditions.

Hyperidrosis is defined as excessive sweating, and may be general, as in advanced tuberculosis or other greatly debilitating diseases. Again it may be more of a local affection, most frequently observed in the hands, feet and axillae, and ascribed to some derangement of the sympathetic nervous system. Sometimes it is quite rebellious to treatment. Closely allied to hyperidrosis, and clinically in some ways of much more importance, is bromidrosis, defined as a functional disturbance characterized by the secretion of sweat of an offensive odor, the feet and axillae being most commonly observed.

Due to the extensive, high-pressured advertising of a household "remedy" which has been described as a witchhazelization of dilute alcohol, more or less, the condition known as halitosis is becoming known to young and old. A recent comic advertising cartoon depicts two tousled-headed youngsters locked in fierce combat, the casus belli being that one of the aforesaid young combatants had taunted the other, "Your daddy's got halitosis." There is no question but that modern, sixteen-cylinder advertising will move mountains of public inertia, and cause the reluctant public to indulge in a frantic scramble to be one of the steenth million purchasers of a jar of that omnipotent household remedy good in obstetrics and all the way down through the years until and perhaps senile dementia overtakes the new arrival, merely by rubbing on the afflicted portion. Rub the magic remedy on the lice-infested head of a baby chick and those lice will go right away from that place; common lard will cause the same migration with equal effectiveness, but the magic remedy costs more, is advertised more, and it is far better for the manufacturers financially that the public use as advertised. By the same token, the advertised remedy is best for halitosis; but we, as professional men, confronted with halitosis should first seek for the cause and try to remove that. It may be diseased tonsils; or decayed teeth or pyorrhoeic gums; or nasal sinus involvement; or digestive upset. I have known an obstinate halitosis to clear up like magic when pyorrhoea-surrounded teeth were extracted, and the same with tonsils, etc.

To return to our hyperidrosis and bromidrosis. Of especial importance in a social sense seems bromidrosis: often the sufferer is unaware of his trouble and, as with halitosis, his friends are hesitant to make it known to him or

her, as the case may be. One of the most brilliant medical students I have ever known was afflicted with this trouble to such an extent that his fellow students shunned him and tried as far as possible to be seated in lecture room away from him. This produced something of an anti-social reaction on part of the unfortunate student, and the condition may have been at bottom of the marked unpopularity of the student, perhaps totally unaware of what excited the attitude of his fellow students. Certainly, it seems to me this condition may have been the foundation which in one way or another led to the failure of this brilliant student to attain the later professional success of many of his fellow students, whose collegiate records were far inferior.

Faulty foot hygiene is undoubtedly at bottom of many cases of hyperidrosis and bromidrosis; and careful attention to this phase will undoubtedly eliminate many cases without further treatment.

As a routine, the feet should be carefully washed with warm water and unirritating toilet soap, with special attention to the toes, the nails of which should be kept carefully trimmed; corns and callous places watched, etc. After careful drying with a soft towel, the feet should be well powdered with a good grade of talcum powder, or with some one of the many excellent foot powders on the market. Fresh socks should be worn each day and, of course, proper fitting shoes used. In summer or in southern latitudes a sandal type of low shoe will be found helpful, with light thin socks. Routine foot care as above described can be used to advantage by everyone, and especially those inclined to excessive or bad-odored sweating about the feet.

Careful foot hygiene is especially desirable in the tropics, owing to favorable conditions otherwise for development of ringworm and a host of other tropical skin lessions.

Hardaway recommends the following as a very excellent foot dusting powder:

Rx. Pulv. acidi salicylici
Pulv. zinci carbonatis praecipitati
Pulv. magnesii ustae aa dr. IV
Pulv. amyli dr. XV
Pulv. talcis dr. XX
Sig: Dusting powder.

A powder for foot use in military service was composed of equal parts of boric acid, starch and talcum. Many excellent formulas have been devised.

A sore footed soldier is badly handicapped, and careful commanders were always very watchful that their men took proper care of the feet. During hikes in Philippine army service, marching was often mile after mile through mud and swamp, rice paddies, etc., and under such conditions it was often very difficult to keep the feet in good condition. On one well-remembered hike up into the mountains of Mindanao after marauding Moro outlaws, the march for most of the day was through swamp and lowland mud. Officers' bedding rolls were carried on the heads of strong bodied and stiff necked native Moro porters, or cargadores in Spanish. In packing the roll my surplus socks were omitted so, upon going into camp that night high up in a mountain valley alongside a dashing, bounding mountain stream, my socks were carefully laundered in the stream and draped upon a fallen tree trunk against resumption of the hike next morning. Next morning those socks had taken wing and were nowhere to be found; no one had seen them. It looked like an all-day hike in shoes without socks; I had visions of blistered feet, etc., when a fellow officer came forth with the loan of a surplus fresh pair. Overjoyed, I carefully talcum powdered feet, put on socks and shoes and was soon ready to go. Just about time the march was being resumed, the line of porters or cargadores wound across the campsite in single file, each carrying a head load of baggage. About midway of the column proudly stalked a cargadore decorated in shoeless olive drab army socks, while all his fellows strode along in customary barefoot. Anastacio, our trusty Filipino interpreter, was quickly brought into requisition and began to ply the proud Moro hombre with hows and whys and wheres as to that pair of olive drab socks. He had "just found them" was his sheepish alibi, and he was just as quickly bereft of his "found" socks, but by this time the soles had been worn and torn on the rocky ground, and visions of all sorts of Moro skin diseases terminated any idea of ever wearing "those" socks again; but to impress fellow Moro cargadores of thieving propensities they were burned in the camp fire before his eyes.

Whenever the question of hyperidrosis or bromidrosis or simple foot hygiene comes up,

our mind's eye promptly reverts to that mountain stream scene in far-off Moro land with its proudly stepping sock-garbed cargadore, who is usually dressed for most informal business wear in the ubiquitous gee-string.

However, prophylaxis is the main therapeutic consideration with either of these annoying conditions; and if the individual will carefully attend to routine foot hygiene each morning, followed with plenty of talcum or foot powder, he will find that day in and day out over the years his "doggies" will be in good condition and ready to go whenever he is.

REFERENCE
"Practice of Medicine," A. A. Stevens, p. 554.

7 East McMillan Street.

THE NEW ANAESTHESIAS.

By PHILIP JACOBSON, M. D., Petersburg, Va.

The reintroduction of spinal anaesthesia after the first wave of enthusiasm for its use had subsided, has served to focus the attention of the medical world upon anaesthesia in general, which, in turn, has been associated with the general acceptance for clinical trial of other new anaesthetics, without a careful inquiry and exact intimate information of their properties, pharmacology, and, if I may so use the phrase, surgical philosophy governing their use. Of these, the most important are the derivatives of barbital by the oral, intravenous or rectal route, the various local anaesthetics used intraspinously and the analgesias employed in obstetrics.

In recent months the literature has been flooded with articles describing the success or failure of the new methods. Whatever experience one may have had, there is no difficulty finding published reports of similar experiences which help determine the disuse or continued use of the method. Occasionally it is a matter of embarrassment to have to deviate from a course once so earnestly advocated, just as it is a source of felicitation to be able to be among the vanguard of the proponents of finally accepted measures. The spirit of improvement and progress occasionally promotes a radicalism which often results in a hindering conservatism. Any change, whether for good or evil, is usually attended by a certain number of disasters, and, if these are justifiable, then no criticism can be made, but, in view of the fact that primary enthusiasms are so often relegated to the limbo of forgotten things, it behooves us to make some attempt to prepare a manner of reasoning that will enable us to avoid these pitfalls, especially in the dangerous field of anaesthesia.

The goals at which surgical efforts are persistently aimed are the conservation of life and the relief of pain. These objects are most generally attained by attacking various pathological processes with the hope of either their removal or correction, and it is in a way ironical that this cannot be done without plunging our patient into deeper trouble than he already finds himself by adding more discomfort and distress and by further jeopardizing his life in order that it might be saved. Thus many factors must be carefully integrated before the procedure to be undertaken can be determined. Condition, operative hazards, the risks of to do or not to do, and the expected result are only a few of the components of an equation, which fortunately can most often be easily solved; but as time goes on new discoveries and information must be recognized, thus interjecting new factors into our calculations. Consideration of new anaesthetics must be so included for the purpose of avoiding the dangers of radicalism and at the same time escaping the rut of conservatism.

Already the signs are in the offing that the present wide use of the barbital derivatives will be but a memory and that rectal anaesthesia with non-volatile substances will be a thing of the past.[1] However, it should be borne in mind that these substances acquired a wide use and an extensive following. It is a question if it had been better had they not existed at all rather than cause some disasters which may not have occurred were the usual familiar routine procedures followed. Their life preserving characteristics have not been equally clearly demonstrated in order to warrant their use. The tragedies associated with the administration of ethylene illustrate this point and the use of this anaesthetic is gradually diminishing. Ethylene was known to be highly explosive, and yet this characteristic was not emphasized until its use became general and more accidents occurred than could possibly be offset by the benefits derived from its use.

In general these clinical experiments have a great potential value in that they may direct

1. Jour. A. M. A., November 8, 1930, Use of Non-Volatile Substances as Anaesthetics.—Current Comment.
Jour. A. M. A., November 8, 1930, Modern Tendencies in Anaesthesia.—Miscellany.

our attention more forcefully to the problems of anaesthesia, to the desirability of attempting to use newly introduced anaesthetics and may produce a healthy scientific skepticism in our attitude towards any procedure, new or old. All anaesthetics probably have a sphere of usefulness to which they eventually become relegated, analogous to that which so many drugs ultimately find their niche of therapeutic value. It is strange that among all this one has to search very closely for references to the virtues of ether, nitrous oxide and local anaesthesia and little mention is made of improvements in them, improvements, by the way, which are parallel and more than equal the claims of the exponents of the new anaesthetics, including spinal anaesthesia in its present state. One can well wonder at times if some of the good results obtained have been due just as much to better surgical technique, pre-operative and post-operative care. The mere fact that an individual has been anaesthetized and wakes up has no more significance in the present era than that he has been operated and survived, and it might be of benefit to evaluate anew many of the factors which contribute to the surgical success of the present.

Today the average operation upon a patient in good condition presents little difficulty and is successful as far as life itself is concerned. Maintenance of life and a degree of pre- and post-operative comfort are thus practically assured to the majority under present conditions. The patient in poor condition and the hazardous risk are those to whom our attention must be turned. In such cases the hazard of the different types of anaesthesia is difficult to evaluate and the part they play in the demise of patients is not definitely known. Accordingly, it would be well to establish an ideal for such cases and then compare our methods with it. The ideal operation would be one in which a fairy hand performed the work with such dexterity, lightness, and gentleness that little or no pain would occur and the patient disturbed so little as to be negligible; thus the operation becomes an incident in the process of returning the patient to health. That this surgical utopia might some day exist is not beyond the limits of probability and, because of rapid changes and refinements in technique, may even enter the realm of possibility in the not too distant future.

Indeed, we have some signs of its presence today because of the many major procedures done under local and regional anaesthesia. Not unfamiliar are the cases which are carefully prepared, operated under local anaesthesia, and returned to their rooms able to resume their pre-operative state of quietude and to begin a smooth and peaceful convalescence with only the memory of a rather warm uncomfortable hour on a hard table under hot sheets.

Surgeons who are most proficient in this wonderful accomplishment are using entirely new methods and instruments, the employment of which in my humble opinion is by no means adequately taught or sufficiently impressed upon our consciousness. These include psycho-anaesthesia, anoci-association, surgical strategy, negative and positive air pressures, extreme gentleness along with the no hand touch and feather edge dissection and the use of suitable methods and instruments in conjunction with them. There are few indeed who realize what pressures are at their finger tips, and yet nearly every surgeon will be far more gentle and respectful of tissues when performing a herniotomy under local than when he is doing the same thing under general anaesthesia.

A digression to a matter of operative technique is not incompatible with the spirit of this discussion. At the same time I do not wish to be dogmatic or attach too much importance to skill, rapidity or finesse. Regardless of how adept, refined or dextrous a surgeon may be, these qualities are still subordinate to his surgical judgment, ingenuity, resourcefulness and mental aptitude for the task. Surgery does not differ from every other sphere of human endeavor in that it requires an inherent talent for its fullest accomplishment. That talent may be termed surgical instinct or intuition. It is as necessary to the successful surgeon as the legal, theological or technical inclinations are to those who would be successful in the law, ministry or engineering professions, and it cannot be replaced by just scholarship or desire. Nevertheless, skill in technique is of tremendous importance and it should be given its just place and adequately emphasized in surgical training. Yet it is strange that it is universally omitted. While my sources of information are meagre, I know of no institution where the refinements of manual dexterity in surgery are taught.

Such is not the case with other things re-

quiring manual skill. The musician, the golfer and the artist are carefully taught what to do with their fingers, wrists, hands and eyes and the benefits of muscular relaxation and mental control are forcefully impressed upon them until the minutest detail is performed subconciously almost entirely under reflex control thus leaving the mind free. One will readily concede that the concert hall is no place to learn to play an instrument nor the tournament the time to become an expert. Regardless of the degree of skill, practice at detail and maneuvers will in time improve it and this cannot be done at the operating table. How it can be done is difficult to say. While my own degree of skill is, in fact, below the average, this matter has occupied my attention for some time and I hope in the near future to be able to express some views which perhaps will receive better treatment in more experienced and capable hands.

The problem of reducing the operative hazards for cachectic and senile patients or any in whom the vital forces have little power cannot be answered by the course we are now pursuing. The sudden exodus of such patients a few hours after operation is a disconcerting experience with which we are all familiar, and our feelings are not mollified by the reflection that no known surgical error has been committed. The terms shock, collapse, hemorrhage, or cardiac failure, are explanations only and their full significance is as yet unknown, pointing to a further need for intensive study of the physiology of the patient during operation including the effect of psychic states. The desire and the ability to do this should be a part of every surgeon who contemplates departing from known safe channels into speculative and experimental pathways.

Already suspicion has been cast upon the barbital compounds and tribromethanol and the indications at present point to a rather limited sphere of usefulness as basal anaesthetics or as a means of pre- and post-operative quietude. It is not unreasonable to suggest that such an outcome may have been predictable. These substances were known experimentally to have produced incomplete anaesthesia, without moment to moment control, to have a low margin of safety and to afford insufficient relaxation. Furthermore, in the event of accident, neutralizing substances had not been worked out. If anaesthesia were unknown today, their use could not be questioned but, in view of our present successful anaesthesia, their inclusion into our surgical armamentarium was open to question until experimental results warranted clinical trial.

Obstetrical analgesias also have come and gone. Twilight sleep, after leaving a trail of infant mortality and publicity, has disappeared. Its original use was never justified. Directed primarily at pain, new converts to its use did not in the beginning study carefully the relation between pain and maternal and infant mortality. If its motive was humanitarian only, it was another rose with thorns. In what manner it could reduce postpartum hemorrhage, fetal injury, or maternal accidents was not clearly defined before its use became widespread. Obstetrical analgesias are still sought in the large lying-in clinics of the cities but their use is diminishing as the diagnostic accuracy of obstetrical pathology and the probable mechanism of each individual case is increasing. The reasonableness of producing effects in a mother, which in turn may possibly affect her foetus, is open to question until methods of accurate observation of the foetus are developed.

So much for hindsight, axiomatically far superior to foresight. The opportunity for the latter is at hand in the case of spinal anaesthesia, criticism of which may prove a veritable boomerang to its author. It has long been thought that successful anaesthesia of the spinal cord at various levels would eliminate many of the dangers of general anaesthesia and rob surgery of some of its horrors. To that end intensive research has been carried on to find a non-toxic substance and a means whereby it could be made to stay in the spinal cord at the level at which it was put. This research has been rewarded by the practical accomplishment of both objects and clinical trial has demonstrated the successful use of spinal anaesthesia in many cases and under various conditions. Successful spinal anaesthesia is indeed a delight to the surgeon and a not unpleasant experience for the patient.

It is significant to note, however, that accurate and intimate information is becoming available after its use has become general and not before; in fact, many began its use with only literature supplied by the manufacturer. Many untoward effects have been noted, but, as long as these are due to faulty administra-

tion, imperfect media or inadequate compounds, experience of the past warrants the assurance that the future will find the elimination of these defects. The bogey of respiratory paralysis has just about been disposed of.

However, evidence is being adduced that is beginning to show that anaesthetization of a large part of the body cannot be done without the whole organism being affected in some way. For example, the effect upon the cardiovascular system has been such that it defied correction even several hours after the operation had been concluded.[2] It is evident, of course, that in such cases our means of stabilizing the blood pressures are inadequate and, if this be accepted as fact, then our tampering with it is certainly unwarranted.

Recent investigation has served to bring to light the effect of spinal anaesthesia on a patient in the event that an accident or catastrophe occur during the operation. It has been shown in dogs that the danger of circulatory failure from hemorrhage is greater under spinal anaesthesia than under ether, and the reaction of various individuals to proportionate amounts of spinal anaesthesia is strikingly different.[3] This would all be very well if the anaesthetic could be instantly removed if untoward results occur, but should this be accomplished it is inconceivable that the return of individual nerve cells to normalcy would occur at the same time.

Therefore, the feasibility of spinal anaesthesia depends upon two issues,—first, the danger to life in the event that an operative accident or catastrophe occurs, and, second, the ability to forecast previous to administration the reaction of the life processes of individuals to it. According to this manner of reasoning, the fact that a patient can be successfully and comfortably operated under this form of anaesthesia becomes of secondary importance. These considerations apply just as well to anaesthetics now in use, but their continued use is based upon and justified by a sound principle—controllability—which may be applied to the volatile anaesthetics and local and regional anaesthesia. In their administration, when correctly done, vital processes are disturbed but little and, when they are, mere discontinuation of the anaesthetic results in a comparatively short time in the return of the majority of the forces in operation during consciousness even though the patient remains unsconscious. Practically every vital force remains under full control for as long a time as necessary, and individual variations are easily taken care of as they present themselves. Volatilty of the anaesthetic serves to explain this phenomenon, but perhaps it were better to use the term evanescent action because an anaesthetic material which is not volatile but still is evanescent in action may be discovered. The laws of chemistry may dictate that these two properties must go hand in hand and, in the final analysis, the whole affair is for the chemist and the physiolgist to work out, not the clinician.

The phrase "When correctly done" is full of life and meaning, the keynote to either success or failure. In anaesthesia it often determines life or death. To many anaesthesia means pouring ether on a mask, to others it is the goal of endless effort, study and experiment. The commonest spectacle in our operating rooms today is a highly trained, brilliant surgeon performing an operation with a nurse or an indifferent interne, often picked at random as the anaesthetist. When ether pneumonia develops, the blame is laid upon ether. It is reasonable to believe that mortality figures would vary somewhat if the anaesthetist and surgeon were equals in their respective fields and the former were as alive and eager to take advantage of variable anaesthetic opportunities occurring in each case as the latter does of analogous surgical situations.

The technique of our present anaesthesia is even now not standardized. In even such a minor detail as the mask, hardly any two institutions use the same covering and as far as I know no manufacturer has developed a special material for this purpose. Yet certainly various materials diffuse ether differently, admit various amounts of air and permit a variable amount of carbon dioxide and moisture to either escape or be rebreathed. Other situations could be cited but are unnecessary to bring out the view that anaesthesia is commonly thought to depend more on materials than it does on brains. Tabulations of results with any anaesthetic seldom include the ability of those handling them, a rather important omission. As in surgery, materials, instruments and skill are vital necessities for anaes-

2. Harrison, P. W.: Spinal Anaesthesia in the Near East. **Archives of Surgery**, October, 1930.

3. Burch, J. C., and Harrison, T. R.: The Effect of Spinal Anaesthesia on the Cardiac Output. **Archives of Surgery**, August, 1930.

Burch, J. C., Harrison, T. R., and Blalock, A. A.: Comparison of the Effects of Hemorrhage under Ether Anaesthesia and Under Spinal Anaesthesia. **Archives of Surgery**, October, 1930.

thesia but brain power constitutes the axis around which both revolve.

Perhaps the impression has been created that criticism has been aimed at our predecessors who have accomplished the brilliant strokes of genius which seem so commonplace to us today. This is a consummation devoutedly to be undesired. The pioneers in anaesthesia had nothing from which to select and, as anaesthesia was necessary for life, any risk was justified. But today human knowledge is so extensive and the methods for experimental study are in such a highly refined state that risks can be reduced to a minimum when new methods are under consideration. In the case of spinal anaesthesia the imperfections which exist today do not enter into this discussion. No method is perfect at its inception. The questions are, is it sound in principle, and is it as sound in principle as local and regional anaesthesia, and upon both questions I find myself upon the negative.

The use of local anaesthesia involves no hazards, but depends upon surgical strategy and refinements in technique. These in themselves are worthy of achievement, but require infinite patience and study. The whole gamut of major surgery has been successfully performed in this manner and thus presents a goal worthy of aspiration. It may perhaps be impertinent to predict that surgery will reach its ultimate perfection in this manner unless some material is discovered which will eliminate the sense of pain without disturbing any other vital force. Successful local and regional anaesthesia would be a brilliant achievement for surgery, and may yet prove the means of reducing the operation to a mere incident in the process of restoring the patient to health.

With regard to anaesthesia, two courses are open to those who are constantly searching for improvement and promoting the progress of surgery. One is individualistic, and tends to create an operative entity with local and regional anaesthesia as a basis but in which the surgeon himself predominates. The other is by the use of materials and methods whereby the whole or a part of the body is placed under complete anaesthesia with associated physiological changes. The latter is as admirable as the former, but should not be undertaken by the clinical surgeon unless he has accurate and intimate information with which he can eliminate any added risk that this method must of necessity include.

INTRAVENOUS UROGRAPHY IN THE DIAGNOSIS OF RENAL TUBERCULOSIS.

By ALAN CHENERY, M. D., Washington, D. C.

In the relatively small number of cases of tuberculosis of the kidney reported thus far diagnosed by the use of uroselectan or skiodan, there have been no permanent ill effects due to the administration of the dye.

Practically all patients have a sense of warmth and thirst. A few complain of nausea and slight pain in the arm at the site of injection, but these symptoms are much less than the difficulties encountered both during and after the average pyelogram made with the cystoscope.

The very great ease and simplicity of intravenous urography suggest a word of caution. We should not lose sight of the great field of usefulness of the cystoscope, making possible as it does a visual inspection of the posterior urethra, the bladder and ureteral orifices, as well as a study of each kidney function separately, intra-urethral and intra-vesical manipulations and the added knowledge to be gained by urography,

Intravenous urography should supplement and not replace the cystoscope.

Case Report

R. C., age twenty-eight, married, admitted to hospital December 27, 1930. Chief com-

Fig. 1.

plaint vesical irritation for past four months, and occasional dull pain in region of left kid-

ney past year. Chest examination negative. Cystoscopic examination, bladder capacity 100 c.c., moderate degree of cystitis, right ureter catheterized, specimen negative for tubercle

Fig. 2.

bacilli, and showed only occasional pus cell. Unable to catheterize left ureter, orifice red and edematous. Tubercle bacilli found in bladder urine. On December 29th, examination

Fig. 3.

of urinary tract by intravenous injection of skiodan. Pictures taken five, thirty, and sixty minutes after injection revealed a normal right kidney with calices of left kidney apparently obliterated. Phenolsulphonephthalein test—right kidney 15 per cent in fifteen minutes. Hemoglobin 80 per cent, red blood cells 4,390,000, white cells 8,500.

In view of the urographic findings and the presence of tubercle bacilli in the bladder urine, it was decided to remove the left kidney. This was done on January 5th. Pathologic report showed tuberculosis of the kidney. Patient made an uneventful recovery and was discharged from the hospital on the twenty-sixth post-operative day.

1835 *Eye Street, Northwest.*

Analyses, Selections, Etc.

Longer Library Hours Urged for District of Columbia.

The following article by Dr. Arthur MacDonald of Washington, D. C., appeared in the *Washington Times*, for April 9th:

"It has often been emphasized that Washington should be a great educational and university center, to attract scholars from all over our country, with this the writer is in hearty accord. To carry out this plan, the first and most important thing, is to make the principal libraries daily accessible to all from 9 A. M. to 10 P. M. and especially holidays when many more can come to them.

"The Librray of Congress has set the example; it is one of the best, if not the best library in the world. The distinguished librarian, Dr. Putnam, has made every possible effort to improve it in every way, and has determined to keep it open every day including all holidays throughout the year, and especially in the summer, when university professors, teachers and specialists can come best to conduct new original research in their respective lines. The manuscript division, it is hoped, soon will be opened until 10 P. M. to accommodate all historical investigators. Every research worker can have a table or room all to himself with every modern convenience. This library is an honor to the American intellect.

"Another important library is that of the Surgeon General's Office in the Medical Museum; this also is one of the best, if not the best medical library in the world; its service is excellent as far as it goes, but un-

fortunately, it closes at 4:30 P. M., every day and at 1 P. M. half-holidays, making its fine collection of books almost useless to those physicians in other places who might want to come to Washington to do research work as is done in the Library of Congress.

"The Secretary of War should see to this matter at once, and ask Congress for the additional employees necessary to keep the library open from 9 A. M. to 10 P. M. every day of the year and especially holidays.

"The Carnegie Library in the city and other libraries like that in the Smithsonian Institution should follow the example of the Library of Congress.

"There is really no valid excuse why those in control of these and other important public libraries should not move at once, make an estimate and ask Congress for the extra employees and appropriations to make these public libraries really public and accessible to everybody at all times.

"It is true, that at first, these privileges might not be utilized, but it would not be long when it becomes known that every scholar and investigator who comes to Washington can find these libraries open to him all the time, the professors and teachers not only in nearby, but in distant States will come, so that it will not be long when Washington will be a university center in reality for research of the highest order.

"Let the Secretary of War and all others in control of Washington public libraries get busy at once and see to it that Washington becomes soon a library center, as well as an educative and university one."

Woman's Auxiliary, to the Medical Society of Va.

Report on the Ninth Annual Meeting of the Woman's Auxiliary to the American Medical Association Held in Philadelphia, June 8-12, 1931.

This report is being made at the request of Mrs. J. Allison Hodges, Richmond, Va., President of the Woman's Auxiliary to the Medical Society of Virginia, who was unable to attend.

To me this meeting was a revelation. It was my first attendance upon a National Auxiliary meeting and I had not anticipated anything so impressive.

The entire roof garden of the Bellevue-Stratford Hotel had been secured as headquarters. There were about 500 women in attendance. Mrs. Walter Jackson Freeman, of Philadelphia, was general chairman. (Many of us remember Mrs. Freeman who addressed our State Auxiliary in Charlottesville two years ago.) During the four days of the Convention, Mrs. Freeman was on the job every minute. Her committees were many and they all seemed to function perfectly.

Socially we had a delightful time. Luncheons, teas, receptions and dances—something for our pleasure every afternoon and evening.

The business sessions were all instructive and inspirational.

Mrs. J. Newton Hunsberger, the National President, read a most encouraging report of the year's work. Several states reported a 100 per cent organization. (Why can't we women of Virginia put our State in this class?) "From a survey recently made," Mrs. Husberger said, "we find that the average doctor's wife belongs to from three to five different organizations and, therefore, has a splendid opportunity for promulgating the aims and objects of the medical auxiliary, such as, preventive medicine, health education and health legislation."

The value of the "Study Programs" was stressed. These programs have been sent to all states for use in the county auxiliaries. Some states have prepared a study course of their own covering the medical and health laws as related to that particular state. Ever and always the plea of our President was "Physician's wife educate thyself."

The three minutes allowed for the reading of state reports sufficed only for a summary of what was being done. A most encouraging fact was that *each* state had a report. The report from Virginia, in the absence of our President, Mrs. J. Allison Hodges, was read by Mrs. Stuart Michaux, of Richmond. It was evident from this report that Virginia, under the able leadership of Mrs. Hodges, is making progress.

Among the many things that our sister states are undertaking, the Student Loan Fund seems to have the strongest appeal. This fund for medical students, both men and women, is sup-

ported by the local auxiliary as well as by the state medical society where this work is being done.

Mrs. Redd, our National Historian, has written the history of medicine in Texas, "The Medicine Man." Half of the proceeds from the sale of this book goes to the Student Loan Fund in Texas.

Our new President, Mrs. Arthur B. McGlothlan, of St. Joseph, Mo., presided at the closing session. At this time, there was held a round table discussion on the question "What Have I Gotten Out of the Convention?" Many took part in this discussion and, needless to say, it was very interesting for I believe all present realized, as never before, the part the doctor's wife is taking in spreading the gospel of preventive medicine and health education.

In conclusion I would say, go to the A. M. A. meeting in New Orleans in 1932 and learn for yourself the actual and potential value of the Woman's Auxiliary to the American Medical Association.

Amy Tutwiler Ennett
(Mrs. N. T. Ennett),
President, Richmond Auxiliary,
Delegate to National Convention.

Richmond, Va.,
June 22, 1931.

Woman's Auxiliary to the Norfolk County Medical Society.

The installation of officers and presentation of posters featured the meeting of this auxiliary on May 26th. The installation ceremonies were conducted by Mrs. M. N. King, parliamentarian and ex-president of the auxiliary. The following officers were installed: Mrs. R. U. Burges, president; Mrs. Franklin D. Wilson, president-elect; Mrs. Robert McMurran, Mrs. C. L. Harrell, and Mrs. C. A. Saunders, vice-presidents; Mrs. Millard B. Savage, recording secretary; Mrs. Frank Redwood, assistant recording secretary; Mrs. C. J. Devine, corresponding secretary; Mrs. F. C. Rinker, assistant corresponding secretary; Mrs. C. C. Smith, treasurer; Mrs. Albert Wilson, historian; Mrs. N. G. Wilson, assistant historian; and Mrs. Eugene Lowenberg, parliamentarian. Prior to these ceremonies, Mrs. W. P. McDowell, retiring president, was presented a silver bowl.

Posters in blue and gold, representing the various group activities of the auxiliary, made by the chairmen of the various committees, were presented. These posters were exhibited at the meeting of the Norfolk County Medical Society at its meeting on June 1st.

Mrs. Julian Rawls, treasurer, reported a total of $2,032.83 received for the year.

Mrs. McDowell presented the auxiliary an oak gavel made from a part of a famous old tree in Hickory.

Open Letter to Members.

Dear Members:

The annual meeting of the Medical Society of Virginia will be held in Roanoke, October 6th to 8th. The Woman's Auxiliary is always held in conjunction with this meeting.

The weeks fly so swiftly that October will be here before we know it. I am writing this note to urge that our members bear the Auxiliary upon their minds and hearts during their summer travels. Whenever possible, talk to doctors' wives in any city, town or county in Virginia and try to interest them in forming an auxiliary. Send names and addresses of any prospects to our Chairman of Organization, Mrs. M. N. King, 1314 Westover Avenue, Norfolk, Va., or to the President. They will gladly follow your efforts with letters of information and visits if desired.

We believe when the majority of the work of the Auxiliary is fully realized by the women, they will gladly join with us in our efforts to cooperate with the Medical Society in improving the health conditions of the State. We are especially interested in the preschool examinations of children by the family physician and the pre-natal and post-natal clinics now being held in many cities in the State for the benefit of mothers.

Mrs. Southgate Leigh, of Norfolk, Va., Chairman of Health Education, has prepared some excellent study programs which she will send you upon request.

Our slogan is "Inform Ourselves First" so that we may be able to give definite information to others.

In addition to the usual reports at the Roanoke meeting, we wish to have round table discussions and plan for the future work of the Auxiliary. We will welcome any suggestions for the convention program.

After the inspiring report from Mrs. Ennett, our delegate to the American Medical Association Auxiliary, I feel that we should redouble our efforts and extend our work so that Vir-

ginia can take her rightful place among the other States.

Call upon me if I can serve you in any way.

Sincerely,

MARY GRAY HODGES,

(MRS. J. ALLISON HODGES.)

President, Woman's Auxiliary to the Medical Society of Virginia.

Panoramic View of the Woman's Auxiliary to the A. M. A.

EXCERPTS FROM REPORT BY MRS. C. W. GARRISON ON SOUTHERN DISTRICT

The third or Southern District of the Woman's Auxiliary to the A. M. A. may not have moved so rapidly as regards the number of Auxiliaries organized as the other sections but the quality of those existing have proven them to be of the greatest value in promoting the aims of the national body.

Alabama reported three counties organized last year, and is particularly interested in a health program giving especial attention to children with a tuberculous condition.

Arkansas reported thirteen counties organized, all giving attention to a health program and trying to raise an adequate loan fund for medical students only. Some of the counties contributed obstetrical kits for use in the rural districts. Many of the Auxiliary members in Arkansas are devoting much time and energy to the Parent-Teacher work and are aiding in the various civic and welfare organizations.

Florida, large areas of which are sparsely settled, has ten auxiliaries. Some of these are composed of a combination of two or more counties. Proof of the quality of these groups was seen when a large medical organization and its Auxiliary were entertained in Miami in 1929.

Georgia, which has given to A. M. A. Auxiliary one of its most efficient presidents, Mrs. Allen H. Bunce, has more counties than any other state of its size and has twenty-one of these organized for Auxiliary. They have the full approval and cooperation of the State Medical Association and, having attended their State convention in 1929, the writer will vouch for the fact that no national meeting is more replete with interest and enthusiasm than were found in Georgia, nor have we found anywhere a greater desire to foster the aims and purposes of the National body.

Louisiana reports only two parishes organized. Taking into consideration the fact that one of these two auxiliaries has a greater enrollment than have some whole states makes us feel that Louisiana will not be far behind in the number of parishes when her final report of accounting comes in. She is not lacking in interest in any direction because the president of the State Auxiliary is of the type who says "We will."

Mississippi reported four auxiliaries last year, and again we are able to speak with assurance of our expectations from this state. The president of the State Auxiliary attended the meeting in Detroit and returned to her state carrying with her additional enthusiasm and determination to gather into the fold more county organizations. This Auxiliary has the approval and encouragement of the medical men of their state to go forward.

We may expect to hear of more interest, as well as more auxiliaries in North Carolina. Though we have before us no report for last year, we do know of their interest in the past and believe we may hear the number five at least doubled in their next report.

South Carolina shows thirteen counties organized, and the president was prompt to reply with assurances that better things are ahead for next year.

Oklahoma reports only one Auxiliary but we feel certain that others will be added before June.

On invitation from its President we had the pleasure of meeting with the Davidson County Auxiliary in Tennessee early in October and found a splendid group of women earnestly desiring to serve in the most useful way. While only four auxiliaries are reported from Tennessee, they are the counties in which the largest cities are located. The distances are great between, but with the known interest and enthusiasm of the two counties visited, Davidson and Shelby, we are assured that Tennessee will bring to the next National Meeting a report filled with accomplishments which tend to fulfill the aims and purposes of the Auxiliary.

We were not fortunate enough to meet with the Texas Auxiliary, but Texas, the mother state of the Medical Auxiliary as it is now recognized, has thirty-five County Auxiliaries and, with a live, interested organization chairman such as the present one is proving herself to be, others will be added before the next State meeting in May. Texas Auxiliaries

have earnestly promoted a health program, always working shoulder to shoulder with the fine progressive men of the Medical Association who, in turn, endorse the Auxiliary movement, and are unstinted in encouragement to further development of the organization.

The Truth About Medicine

In addition to the articles enumerated in our letter of April 25th, the following have been accepted:

Hixson Laboratories, Inc.
  Rabies Vaccine (Hixson).
Lederle Laboratories, Inc.
  Concentrated Pollen Antigen (Lederle) Ragweed Combined.
  Diphtheria Toxin for Schick Test in Peptone Solution.
Eli Lilly & Co.
  Diphtheria Toxoid—Lilly.
  Syrup No. 112—Ephedrine Hydrochloride.
Chas. Pfizer & Co.
  Calcium Gluconate—Pfizer.
Spicer & Co.
  Quinicbine Ampules, 2 c.c.
E. R. Squibb & Sons
  Grasses Combined Pollen Allergen Solution—Squibb.
  Cottonwood Pollen Allergen Solution—Squibb.

The following articles have been exempted and included with the List of Exempted Medicinal Articles (New and Non-official Remedies, 1930, p. 477):

Hixson Laboratories, Inc.
  Diphtheria Antitoxin.
  Tetanus Antitoxin.

NEW AND NON-OFFICIAL REMEDIES

Mead's Powdered Brewer's Yeast.—Dried brewer's yeast harvested under aseptic conditions; it assays approximately 13 vitamin B_1 units per gram and approximately 1 vitamin B_2 unit per gram. The product is proposed for prophylaxis and treatment of conditions arising from deficiency of the vitamin B complex in the diet. It is also proposed as a means of stimulating the appetite and growth and for a beneficial effect in lactation. Mead Johnson & Co., Evansville, Ind. (Jour. A. M. A., May 2, 1931, p. 1477).

Diphtheria Toxoid.—A diphtheria toxoid (New and Non-official Remedies, 1930, p. 364), prepared from diphtheria toxin by treatment with formaldehyde. It is marketed in packages of one immunization treatment and in packages of fifteen immunization treatments. Eli Lilly & Co., Indianapolis.

Ampules Solution of Nupercaine—Ciba, 25 c.c.—A 1:1,000 solution of nupercaine—Ciba (Jour. A M. A., March 21, 1931, p. 946). Ciba Co., Inc., New York.

Schieffelin Psyllium Seed.—A brand of psyllium seed—N. N. R. (New and Non-official Remedies, 1930, p. 311). Schieffelin & Co., New York. (Jour. A. M. A., May 16, 1931, p. 1694).

Diphtheria Toxin for Schick Test in Peptone Solution.—A diphtheria toxin (New and Non-official Remedies, 1930, p. 380), made by growing diphtheria bacilli in broth, ageing and diluting with peptone solution according to W. E. Bunney. The product is ready for use. It is marketed in packages of one syringe containing diluted diphtheria toxin sufficient for one test and in packages of one vial containing sufficient for ten tests. As a means of control, diphtheria toxin heated to 75 C. and diluted with peptone solution is supplied. Lederle Laboratories, Inc., Pearl River, N. Y.

Pollen Allergen Solutions—Squibb.—The following pollen allergen solutions—Squibb (New and Non-official Remedies, 1930, p. 27; Jour. A. M. A., December 20, 1930, p. 1913), marketed in 5 c.c. vials, have been accepted: Cottonwood Pollen Allergen Solutions—Squibb. The following pollen allergen solutions—Squibb (New and Non-official Remedies, 1930, p. 27; Jour. A. M. A, December 20, 1930, p. 1913), marketed in 5 c.c. vials, in treatment set packages A, B, C and D, and in three vial treatment packages, have been accepted: Grasses Combined Pollen Allergen Solutions—Squibb (Bermuda Grass, June Grass, Orchard Grass, Red Top, and Timothy, in equal parts). E. R. Squibb & Sons, New York. (Jour. A. M. A., May 30, 1931, p. 1872).

Book Announcements

An Introduction to Gynecology. By C. JEFF MILLER, M. D., Professor of Gynecology, Tulane University School of Medicine; Chief of the Department of Gynecology of Touro Infirmary; Senior Visiting Surgeon, Charity Hospital, New Orleans. St. Louis. The C. V. Mosby Company. 1931. Illustrated. Octavo of 327 pages. Cloth. Price, $5.00.

Clinical Dietetics. A Textbook for Physicians, Students and Dietitians. By HARRY GAUSS, M. S., M. D., F. A. C. P., Instructor in Medicine, University of Colorado, School of Medicine. Assisted by E. V. GAUSS, B. A., Formerly Assistant Dietitian, Presbyterian Hospital, Denver, Colorado. St. Louis. The C. V. Mosby Company. 1931. Illustrated. Octavo of 490 pages. Cloth. Price, $8.00.

Transactions of the College of Physicians of Philadelphia. Third Series. Volume The Fifty-Second. Philadelphia. Printed for the College. 1930. Octavo of 299-lxxii pages. With Illustrations. Cloth.

Hospital Service in the United States. 1931. Tenth Presentation of Hospital Statistics by the Council on Medical Education and Hospitals of the American Medical Association. Hospitals Registered by the American Medical Association. Reprinted from the Hospital Number of the Journal of the American Medical Association. March 28, 1931. Pamphlet of 97 pages. Price, 50 cents.

The Doctor and His Investments. Financial Policy and Technique for the Physician. By MERRYLE STANLEY RUKEYSER, B. Lit., M. A., Financial Editor, Medical Economics and Dental Surgery; Financial and Editorial Writer, New York American and Associated Newspapers; Associate in Journalism, Columbia University, etc. Philadelphia. P. Blakiston's Son & Co., Inc. 1931. Octavo of 330-viii pages. Cloth. Price, $2.50 net.

The Ruins at Kiatuthlanna Eastern Arizona. By FRANK H. H. ROBERTS, Jr., Smithsonian Institution. Bureau of American Ethnology. Bulletin 100. United States Government Printing Office. Washington. 1931. Octavo of 195-viii pages. Illustrated. Paper. For sale by the Superintendent of Documents, Washington, D. C. Price, 65 cents.

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Editorial

Ennion Gifford Williams.

"On the health of the people depends the strength of a nation."—this recorded observation of a wise philosopher has become a universally recognized truism. The principle declared was known to peoples and civilizations of remote antiquity, most of whom regarded all sickness, both individual and widespread, as visitations of an offended deity. The alleviation of the curse was naturally through propitiation in order to appease their childish god, the creation of a childlike mind. Evidences of an awakening to a more or less rational appreciation of cause and effect may be found in the records of ancient Egypt, while definite laws of sanitation and health were laid down by that remarkable leader and benign autocrat Moses, who probably acquired the necessary knowledge in this line during his sojourn in Egypt. So throughout most of recorded history we find evidences that attempts of one sort or another have been made to improve the health of peoples through statute and commands, the energy of the attempts depending however, in large measure on the appearance of an epidemic or pestilence.

During these periods all efforts were naturally ineffective since no real knowledge of the true relation of cause and effect was had; so not until the discoveries of Pasteur was it possible to prevent diseases which effect large numbers of people. Even after his discoveries were widely known it required considerable time to overcome prejudice and educate both physicians and the public generally, to a sufficient degree to make it possible to apply the newly found knowledge on a sufficiently large scale to be of general benefit.

So public health measures applied through organized agencies and supported by national or state statute date from about the beginning of the present century. A few pioneers appeared in several states of this country about the same time, who saw far into the future and began the fight for the eradication of communicable disease through the agency of an organized public health department. Among those was Ennion Gifford Williams—Virginia's first, and up to the time of his death her only Health Commissioner—the oldest State Health Commissioner in point of continuous service in the United States.

Ennion Williams was born January 17, 1874. Sprung from the loins of sturdy, determined pioneer Virginia stock of ancient lineage, he started life with a goodly heritage, well prepared from inheritance for the life of activity and accomplishment which he lived. He was nurtured by parents who possessed and followed with inviolable fidelity the faith of their fathers, and in a home where the fear and admonition of the Lord were literally palpable, and yet tempered with a gentleness and sweet family union which can be appreciated and understood only by one whose good fortune it was often to enjoy its generous, genial, and kindly hospitality.

This family relation was followed and maintained in his own home throughout the years by Ennion and his noble wife, even to the gathering around the fireside at eventide of the whole family while he, the head of the house read from the Scriptures and offered a simple prayer; and it has been the privilege of the present writer to witness this evidence of loyalty to and dependence on Divine Leadership.

ENNION G. WILLIAMS, M. D.

In September, 1892, he entered the University of Virginia, first taking an academic course and afterwards studying medicine, earning his doctorate in 1897. During these years at the University he formed some of his closest friendships, and some of these have endured through succeeding years, to support him in a feeble way, in some of his struggles for the health of all the people of his beloved State of Virginia.

Although his attention was first directed to the possibilities of a career in public health some time before he became of age, his determination to follow his inclinations was probably crystallized while serving as an interne at Willard Parker Hospital, in New York, where many another has received the inspiration to fight communicable disease as a vocation. He served elsewhere also in the days of his apprenticeship, in other branches, for he felt that his experience should be varied, and that no bit of knowledge in the medical sciences would be wasted. He had heard of work being done, and knowledge being possessed by those on the other side, and went finally to Europe where in the all too short time at his command he rounded out the fundamental education on which he was to erect the superstructure of the now extensive Health Department of Virginia.

The knowledge he had thus acquired was meager in comparison with what is known today concerning communicable diseases, their causes, the manner of their spread, and the methods of combating and finally overcoming them; but he had imagination — vision, and a fixed determination, and the race was begun. The establishment of the State Department of Health was accomplished after tremendous effort on the part of those who saw the necessity for such a branch of state government, and Ennion Williams was the guiding spirit in its establishment and the inspiration for the necessary legislation. He was appointed first Health Commissioner and remained through administration after administration, while fights in other political fields were waged and lost, until his death on June 6, 1931.

The history of the activities of the State Health Department, and its accomplishments notably as regards typhoid fever, tuberculosis and rural sanitation may be learned by reading the printed reports, and the minutes of the State Board of Health, and are in a measure familiar to all who are truly interested. That the success of the health movement in Virginia has been due to the wisdom and efforts of Ennion Williams none will argue. To what personal traits and characteristics were all these things due?

It has been said that no man of affairs can be adequately appraised until fifty years have elapsed since his death, and in a measure this is true; yet any subsequent appraisal must rest largely on the evidence of contemporaries, however, much this evidence may be biased by admiration and affection on the one hand and animosity or bitterness on the other. Perhaps the most important of the personal traits of Ennion Williams, which made for success, was the willingness and desire to learn. It must be recalled that when he took over the direction of the health destiny of his state there were no really trained public health workers or administrators; therefore it was his constant effort to possess himself of any knowledge through which his work could better be done. He listened to and learned from any one who might give him even a thought on which to act. He read continuously and visited other health departments particularly that of the nation. He not only visited laboratories where investigation was being made of newly discovered diseases, and new evidence acquired regarding the cause and cure of well known but poorly understood ones, but he was an untiring worker in the laboratory himself. Whatever knowledge he acquired, whether of a scientific or administrative nature, he was willing and anxious to pass on to others. He described in minutest detail to his co-workers and even those in humbler places what he had learned, and together they would devise means and methods of applying known facts. Thus he was both a student and a teacher.

A desire for truth was in reality with Ennion Williams a passion. When the truth was found he followed it and adhered to it with almost puritanical conscientiousness which some attributed to stubbornness, but which those who knew him best knew to be due to a skepticism towards the acceptance of unproved near truths, and to what might be called a radical conservatism. When once convinced that what he thought was wrong, no one was more ready to act in accordance with facts—but they must be facts and not theories; truth was the guide of his conscience and conscience the guide of his life and conduct. He acted in accordance with the dictates of his conscience, regretting if what he did hurt one of his fellow men, but regardless of whom his decision hurt, including himself.

It has been said that a sense of proportion, that is, the ability to differentiate between the essential and the non-essential, determines the success or failure of one in any direction, and this is probably true. This sense of proportion was possessed by Ennion Williams to a marked degree. If a matter was really essential, however trivial it might appear to be, it must be attended to regardless of time or trouble. If it was not essential, or did not appear to him to be, regardless of the advocate of the measure, it just wasn't done. This zealous attention to details played no small part in the successful working of the State Health Department.

If one trait of Ennion Williams's character may be stressed above all others, that trait was devotion—devotion to his family, devotion to his friends, and—yes—above all other things and persons—devotion to the cause so early and constantly espoused—the health of the people of Virginia. He never loved Caesar less, but he loved Rome above all else.

The power to inspire to strenuous effort is the one characteristic of a great leader, and this Ennion Williams possessed in an extreme measure. No one ever worked with him or under his direction who did not feel this subtle influence; and this extended to all with whom he came in contact. And closely akin to this trait is that of being an advocate. When he quietly, persistently and firmly advocated a measure which he thought necessary or advisable for the success or betterment of the work in hand, the resulting breaking down of opposition was worthy of the term diplomacy. When he issued his orders and made his requests his tone was kindly but brooked no opposition, and his loyalty to his cause, his co-workers and his friends could never be questioned. His judgment was usually sound, although at the moment it might have seemed otherwise, and if during the last months of his life this judgment might have failed in its usual accuracy, in some respects, it was due to his failing health, and not to a hardened heart.

To one who has been as close to Ennion Williams as the present writer it is difficult indeed to speak without a display of emotion unbecoming on an occasion such as this. Those who knew him best loved him not for his accomplishments; nor for his self sacrifice; nor even for his devotion to duty and friends.

They loved him for himself. He loved his friends and all the people of Virginia were the friends most beloved by him. His untiring energy did much in the accomplishing of his journey to the goal of the ideal of his youth—the freeing of the people of his state from the tyranny of communicable disease; and so like all idealists, dreamers and visionaries, no matter by what name they are called, he gave himself unstintingly to the cause: sacrificing himself to the end. No one ever saw Ennion Williams when he was not in action. He never stopped for a minute and never rested. Life was too short for him to accomplish all he had set out for himself, and his greatest desire was to die in harness.

And thus passed from the active scene on June 6. 1931, the greatest Virginian of his generation, if true greatness is to be measured as it should, by what one does for his fellow man. And so we may say for him "I have fought the good fight, I have finished the course" and with the satisfaction of a trust well kept, and an unfaltering faith in the final victory of Right and a life lived according to the dictates of conscience I go to "Meet my Pilot face to face."

L. T. R.

The State Board of Health and the Medical Society of Virginia.

The death of Ennion Williams brought to a close an epoch in the history of the State Board of Health in Virginia. For many years, under the leadership of Dr. Williams, there has been built up an organization that has performed signal work in the field of preventive medicine in this state. This organization, assuredly, will carry on the larger program so wel llaid out by Dr. Williams during his years of untiring work. While experience of the past decades will give force and vigor to these workers, the loss of this strong leadership will be felt. Dr. Williams' seasoned judgment will be missed; his insight into difficult problems will be missed; his effective and successful methods of securing supportive legislature enactments for the welfare of public health will be missed; his calm, his poise, his indomitable will to obey, the call of high duty will be missed; his strikingly successful ability to deal with delicate and intricate matters affecting the interests and welfare of his fellow physicians over the State will be missed. These losses to the department of public health; to the people of the State of Virginia; to the profession of medicine in this Commonwealth, will be keenly felt and will be difficult to overcome. In this sense then the work of the state department on preventive medicine is marked by an epochal loss that must mean much to its usefulness and effectiveness.

A new era faces the new administration. This new leadership, however, may be no less successful, no less distinguished, than the one just brought to an untimely close; even, one may dare to say, with added time, this organization under such leadership may perform greater service to the state in the future than has been possible in the past. Much remains to be done; larger fields of service to the people remain unperformed; pathology and infection continue in far too great degree; preventable diseases have a too widespread incidence among the population of the state.

In this call to higher service to the people of Virginia, the Medical Society of Virginia, as representing the doctors of this state, as well as allied branches of practitioners, has an important part to play and a real duty to perform. The State Board of Health, under its new leader, will find in these agencies a sympathetic interest and a cooperative spirit for this common aim. Both organizations may be of help to one another. Each may bring to bear forces of cooperation that may make the work of each more successful and effective.

The strongest arm of the public health department is necessarily the private physician. Laws may be passed; plans may be laid at large expense; programs may be projected covering wide educational efforts; but the full, active, sympathetic goodwill and enthusiastic interest of the private physician in the home is the most important and necessary agent in the hands of the state department in carrying forward the mission of lowering death rate, of preventing communicable diseases, of bringing the people of the state to a better state of well being and good health. It is this large factor of success in prevention of disease that the Medical Society of Virginia has to offer the incoming leadership and commissioner on public health. That fine spirit of cooperation between the doctors of the state and the personnel of the organization of the public health, led by the Commissioner of Health,

must be continued, and even quickened to a greater degree, by a sympathetic and considerate understanding between these two important agencies, authorized by the state government to maintain the fight for prolongation of life and prevention of disease among the people of Virginia.

President's Message

Mental Health to be the Leading Topic of Our Next Annual Meeting.

A Discussion of the Intimate Relationships Between Mental and Physical Health

It is with pleasure that the announcement is made that the Committee on Program for the Medical Society of Virginia has decided that the topic for special discussion for its annual meeting at Roanoke, will be: "Mental Hygiene in its Relations to General Medicine and to the Public."

This is probably one of the most dominant subjects before the profession at this time, and it is almost inexplicable that it has not earlier aroused the attention, and energized the activities of the profession; consequently, this discussion should be of the greatest possible interest to all the members. To make a complete diagnosis, as well as prognosis, of any case that is not acute in its manifestations is almost impossible without a thorough study of the mental element in the person and life of the patient.

It is not usually known, but according to Dr. H. Douglas Singer, of the Illinois Medical School, it is a fact that the family physician is more often consulted for mental and functional disorders than for all other ailments combined. There is a reciprocity of interest between the psychiatrist and the general practitioner in the treatment of physical and mental disorders, and intelligent cooperation will lead to greater success in overcoming the problems of mental deficiency, and solve other tasks confronting the management and treatment of the intellectually subnormal. About 13 per cent of the population of the United States is intellectually subnormal or composed of retarded individuals, who nevertheless may be apparently socially adequate, and the situational factors in these borderline cases must be thoroughly studied so as to be correctly interpreted. If these cases, which are frequently involved in anti-social behavior, are correctly estimated in early life, the results leading to crime and delinquency may be largely averted.

Psychiatry is no longer "the step-sister of Medicine, but a respected member of the family of the medical arts and sciences," and it is our professional duty to recognize such a fact and prepare general practitioners as well as specialists and internists to cultivate a skill and interest in the early recognition of mental disease and personality disorders in children, so that our civilization may be advanced, while at the same time it is protected by full knowledge of all of these associated factors in private and public life.

We have finally arrived at the point when, in making up a definite opinion in most cases, the whole and not a part of the patient in question, must be considered and definitely determined. This modern point of view, always taking into consideration the mental status and tendencies of the patient, will in the future add as much to the full and adequate determination of the patient's present behavioristic attitudes and future outlook on life, as any method of practice that has ever been put in operation.

We welcome this opportunity that will popularize this mode of thought and action, and believe that this discussion will open new fields of investigation and research work for many who have not heretofore considered this subject.

"A large part of the mastery and knowledge in modern times is acquaintance with the sources of information," and this meeting promises much to the intelligent student who may attend, and will give a new meaning to the health ideal of "a sound mind in a sound body," as well as a new understanding of the relationship of the one to the other.

J. Allison Hodges, M. D.,
President, Medical Society of Virginia.

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

The General Practitioner.

In response to the invitation of the president-elect to share his page in the current issue of the MONTHLY, it occurs to me that since the majority of people are treated by a family physician and likewise, notwithstanding the prophecies of his rapid passing, the majority of physicians are, and probably always will be family advisors, a word relative to the present trend may be not without interest.

As all well know, the drift into the specialties has been strong during the past decade. Manifestly, there has been two chief reasons, the one, the rapid development of medicine has been such that in the specialties competition has been less and remuneration greater. The other has been the apparent narrowing of the field of general practice through preventive medicine.

In addition, doubtless there has been also a falling off of interest in general practice from a cause relative to which little consideration has been given until recently. I refer to the difficulties which the Medical Schools have encountered in planning curricula that fit into both the scientific and practical demands of the times. In the days of the preceptor the student passed from him, his preceptor, to a medical college in which the majority of his teachers did more or less general practice. He now passes directly from the pre-medical college into his medical training under the guidance almost exclusively of specialists, many of whom themselves have had little opportunities to either engage directly in general practice, or to learn first hand of its requirements. Consequently the graduate of today has grown up in an atmosphere of specialism with a rare opportunity to even visit the office of a wide-awake general practitioner or to otherwise come in contact with him. Certainly in making this comment no criticism is intended of medical schools, for like other agencies that have made for progress in medicine they of necessity are in a sense developing by experiment as well as through a well ordered study of the problem.

In the way of progress it would seem that the two most promising plans being tried out are those of certain schools in which arrangements are made with capable men in general practice to use as assistants for a certain length of time members of the senior class prior to graduation. The other is, what would seem to be more promising, the plan of equipping out-patient departments with suites of rooms modeled after those best suited for general practice and the employment part time of properly trained and temperamentally suitable general practitioners, under whose guidance students examine and treat patients in accordance with the best methods of private practice, not omitting a matter of great importance from the economic side, proper accounting practices, brief case records and follow-up of patients in their homes.

The observation that so large a proportion of even well educated men who have in the past gone into general practice and in a few years have tended to lose interest in scientific medicine and to drift, certainly must have its influence upon a student who is casting about and making a decision as to his future. The lack of convenient and practical post-graduate facilities and the proper stimulation to be derived from such contacts has undoubtedly in the past accounted in a large measure for this state of affairs.

However these things may be, most assuredly the type of general practitioner with whom the public was reasonably satisfied a generation ago cannot now survive and one can only speculate as to the type of training and type of man that must evolve. This will be determined in part by the public demand, in part by the greater competition which sooner or later must arise among specialists themselves, largely by such foresight as may be exercised in training undergraduates and likewise in facilities afforded for post-graduate work, both by colleges and by cooperative movements such as that of our own state organization.

For the man in general practice it may turn out that what he has lost in the way of the diminution of infectious diseases may be more than regained, by those who are alert, in taking advantage of the awakening of the public to the importance of treating minor ailments

and of securing advice that will lead to better general health. There is certainly an increasing appreciation upon the part of the public of a careful physical examination and check up both of the adults and the children of families.

For himself the family advisor will undoubtedly be forced to realize that if he is to provide for his patients modern methods and procedures he must also utilize modern business methods and that he cannot ignore such opportunities as are now being afforded of more frequent and intimate contact with fellow practitioners by joining in the development of post-graduate work that best suits his needs. Certainly he can no longer live an isolated existence.

J. W. Preston, M. D.

Standards.

In presenting to the readers of this Department Dr. Preston's article we feel assured of the thoughtful attention of all who are interested in the subject of Continued Education of Physicians. A careful reading of this brief paper will in most cases give rise to a multitude of thoughts and theories—What is a specialist—When does one become a specialist?—A surgeon?—A diagnostician?

As a profession we are in the infancy of the evolution of standardized medicine. Time was when anyone could declare himself a doctor—time is when anyone can hang out a specialist's sign. There are, of course, numbers of competent and well equipped specialists. There are also number of specialists who generalize and general practitioners who specialize. Doubtless in the course of time specialists will have to qualify as such. We are moving along slowly but upward. In the opinion of many, the general practitioner will survive, and when the records shall be read and the story of those who have scaled the highest peaks of medical achievement shall be written, the general practitioner will be found not in the rear guard of those who minister to man's infirmities.

We trust that the study of this paper will cause others who are interested to contribute short discussions for this Department.

I. C. Harrison, M. D.,
President-Elect and Chairman Department of Clinical Education.

Information

All members of the Medical Society of Virginia are requested to write for any information desired on any subject relative to these Extension Courses in Graduate Medical Education, either to the Executive Secretary, Mr. George W. Eutsler, P. O. Box 707, University, Va., or to the Chairman of the Department.

Proceedings of Societies

The Fauquier County Medical Society

Held its regular meeting on April 30th, at the home of Dr. George H. Davis, in Warrenton, Va., with the president, Dr. Wade C. Payne, presiding. Dr. W. O. Bailey gave a talk on State Medicine and Public Relations; Dr. M. B. Hiden on the subject of reorganization of medical societies in Northern Virginia; and Dr. J. R. Allen spoke on his duties as secretary and on the way communications should be handled. The president appointed Drs. W. O. Bailey and M. B. Hiden to revise the By-Laws of the Society.

A social hour followed the meeting, at which time Dr. and Mrs. Davis served a delicious supper.

Drs. Richard Mason and J. Elwood Knight were hosts for the May meeting of this Society at the home of Dr. Knight in Warrenton. There were sixty-one guests present, of which number twenty-two were physicians. A social hour with light refreshments preceded the business session, at which Dr. Payne presided. Drs. H. Colles Grant, Remington; James B. Smith, Upperville; James L. Stringfellow, Culpeper; and Benjamin L. Hume, Nokesville, were unanimously elected to membership. Drs. Wade C. Payne and George H. Davis were elected delegate and alternate, respectively, to the Roanoke meeting of the State Society. Talks were made by Dr. Richard Mason, Dr. G. Frank Simpson, president of

the Loudoun County Medical Society, Dr. W. O. Bailey, and Dr. J. E. Knight. Both Dr. Simpson, who is chairman of the Committee on Public Relations of the Medical Society of Virginia, and Dr. Bailey, secretary of that committee, spoke on State and Federal Medicine. The Society endorsed these talks and the president appointed Drs. W. G. Trow, Richard Mason and J. E. Knight a Public Relations Committee to assist in carrying out the recommendations made by Drs. Simpson and Bailey. This meeting was followed by a fried chicken supper with dancing for those who could stay longer.

Dr. Wade C. Payne, Haymarket, is president, Dr. J. R. Allen, Marshall, secretary, and Dr. M. B. Hiden, Warrenton, assistant secretary.

Lynchburg and Campbell County Medical Society.

At the meeting of this Society on June 5th, Dr. H. B. Mulholland, of the University of Virginia Medical School, gave an address on the subject of Diabetes. The meeting was well attended and enjoyed by all. At this time Drs. George J. Tompkins and Hunter B. Spencer, were elected delegates, and Drs. Bernard H. Kyle and Ernest G. Scott, alternates to represent the Society at the Roanoke meeting of the State Society. Dr. Don P. Peters is president and Dr. Ernest G. Scott secretary of the Society.

The Amelia County Medical Society,

At its meeting on May 8th, with Dr. J. L. Hamner, Mannboro, presiding, elected Dr. G. Craig Eggleston, Amelia, as president, and re-elected Dr. G. A. Arhart, Amelia, as secretary-treasurer, for the ensuing year. Dr. J. M. Habel was named delegate and Dr. G. A. Arhart alternate from the Society to the Roanoke meeting of the State Society. There was quite a discussion as to State and Federal Medicine as applied to the local societies and also as to the number of cases of insanity reported in Amelia County in the past few years. Dr. Arhart was appointed to look into this last matter and make a report at the June meeting.

The Warwick County Medical Society

Held its last meeting until Fall on May 25th, at which time Dr. W. L. Harris, of Norfolk, presented a paper on "Orthostatic Albuminuria." Drs. H. G. Longaker and J. Warrren Sayre were elected delegate and alternate, respectively, to the Roanoke meeting of the Medical Society of Virginia. The secretary reported that this had been a most successful year and that the programs had been enjoyable and practical. Dr. L. E. Stubbs is president and Dr. Edward L. Alexander secretary of the Society.

The Rockbridge County Medical Society

Met June 11th, with the president, Dr. F. L. Thurman, of Buena Vista, presiding. Dr. H. L. Mitchell, Lexington, is secretary. The speakers at this meeting were Drs. W. P. Jackson, Roanoke, Chairman of the Committee on Child Welfare of the State Society, and Dr. B. B. Bagby, director of the Child Welfare Bureau of the State Department of Health. Twelve members of the society and several visitors were present. The purpose of the talks given was to interest and inform the doctors concerning the program of the Rockbridge County health unit with children who will enter school next Fall. Dr. Jackson stressed the importance of periodic health examinations for school children and adults. It was stated that the Medical Society of Virginia believes that the family physician who can follow the development of the child should give the examination rather than the public health doctor. Dr. Bagby gave statistics showing the number of children who had to repeat grades, much of which it is believed could be avoided if the children are in good health and said that health education should start with the beginner and that the public should be educated to be willing to pay the family doctor for health supervision.

The Norfolk County Medical Society,

At its regular meeting on June 1st, elected the following officers for the ensuing year: President, Dr. H. L. Myers, Norfolk; vice-president, Dr. Joseph D. Collins, Portsmouth; and secretary-treasurer, Dr. Lockburn B. Scott (re-elected), Norfolk. Delegates and alternates to the Roanoke meeting of the State Society were also elected, as follows: *Delegates*, Drs. Walter B. Martin, N. G. Wilson, H. L. Myers, Julian L. Rawls, and P. St. L. Moncure; *alternates*, Drs. Franklin D. Wilson, Joseph D. Collins, C. Lydon Harrell, W. P. McDowell, and C. J. Andrews.

Following the business meeting, the Society heard a fine address from Dr. B. R. Kirklin, chief of the Roentgenological staff of the Mayo

Clinic, Rochester, Minn. The subject of the address was "Gastric and Duodenal Ulcers," and much valuable information was given on the roentgenographical characteristics of these lesions.

The Medical Association of the Valley of Virginia

Held its semi-annual meeting in Clifton Forge, Va., on May 28th, with a good attendance. Dr. Guy R. Fisher, Staunton, is president, and Dr. Wm. P. Gilmer, Clifton Forge, secretary. Interesting papers were read by several members and Dr. Burton Lee, of New York, invited guest. There was also a talk on State and Federal Medicine by Drs. G. F. Simpson, Alex. F. Robertson, and W. O. Bailey of the Committee on Public Relations of the State Society. It was decided to hold the next meeting in Winchester on October 29th.

The Southside Virginia Medical Association

Met at South Hill, on June 9th, with about thirty-five members in attendance.

A splendid scientific program had been prepared for the meeting and all papers were freely discussed.

Several new members were elected. The next meeting will be held at Piedmont Sanatorium, Burkeville, Va., on the second Tuesday in September.

At the close of the program, the visiting doctors were given a delightful dinner at hotel Nordan.

Dr. Ruth Mason, Petersburg, is president of this association and Dr. R. L. Raiford, Franklin, is secretary.

News Notes

Finals of Virginia's Medical Schools.

Medical College of Virginia

The ninety-third commencement exercises of the Medical College of Virginia were held in Richmond from May 30th to June 2nd, inclusive, and were preceded by two days of post-graduate clinics held in cooperation with the Department of Clinical Education of the Medical Society of Virginia. Student Night on Saturday, May 30th, took the form of a play, "Take My Advice," which was presented in the Auditorium of the Woman's Club. Rev. Charles W. Sheerin, of the Grace and Holy Trinity Church, preached the baccalaureate sermon the next day.

Monday, June 1st, was observed as Alumni Day and many distinguished alumni of the College were present for this occasion. Following the morning session there was a buffet luncheon at Cabaniss Hall, for the Board of Visitors, alumni and senior classes. In the afternoon, there was a meeting of the Board of Visitors while members of the faculty and alumni had a golf tournament in which Dr. John Bell Williams, of the alumni, won first place and Dr. Phil Jones placed second. At the dinner meeting at Commonwealth Club, that evening which was attended by approximately 150 members, Dr. J. M. Northington, Charlotte, N. C., was elected president. Dr. F. H. Beadles, Richmond, was continued as treasurer, and Dr. C. L. Outland, also of Richmond, as secretary.

At the final exercises of the College, held at the Mosque Theatre on Tuesday afternoon, Junius P. Fishburn, of Roanoke, Va., President of the *Times-World* Corporation, was the principal speaker, and diplomas were awarded to one hundred and seventy-six students, ninety-four of which were to graduates in medicines, twenty-one in dentistry, thirty-four in nursing, twenty-four in pharmacy and three for bachelor of science in pharmacy. On this occasion, two honorary degrees were conferred, that of Doctor of Science to Colonel William L. Keller, chief of the surgical service at the Walter Reed Hospital,Washington, D. C., an alumnus of the College, and that of graduate in pharmacy on Roy Childrey, associate professor of practical pharmacy in the College. Following these exercises, there was a tea at Cabaniss Hall in honor of the senior class of Nursing, and the annual reception and dance for the graduating class at Commonwealth Club that evening marked the conclusion of the commencement features.

The following is a list of the graduates in the department of medicine with hospital appointments:

Memorial Hospital, Richmond, Va.—Drs. Charles Henry Armentrout, Goshen; Drury

Branch Armistead, Farmville; Leslie Betts Copenhaver, Bristol; Robert Bagley Cralle, Jr., Farmville; John Newton Dunn, Samos; George Washington Holmes, Winston-Salem, N. C.; Francis Henderson Mayfield, Norlina, N. C.; Tom Hall Mitchell, Mobile, Ala.; John Carlysle Neale, Jr., Lanesville; Thomas Edgar Painter, Pulaski; Edward Cotton Rawls, Franklin; Henry Cannon Spalding, Richmond; and Howard Montfort Starling, Hubert, N. C.

Johnston-Willis Hospital, Richmond, Va.—Drs. Reynoldson Duke Butterworth, Butterworth; Walter Eugene Daniel, Jr., Weldon, N. C.; William Beckwith Fuqua, Jr., Radford; and John Bruce James, Danville.

St. Luke's Hospital, Richmond, Va.—Dr. John Elwood Collier, Linden, N. C.

Stuart Circle Hospital, Richmond, Va.—Drs. Oscar William Cranz, Charleston, W. Va.; George Gay, III, Richmond; and William Hume Hoskins, Dunnsville.

St. Elizabeth's Hospital, Richmond, Va.—Dr. Paul Lawrence Dent, South Roanoke.

Grace Hospital, Richmond, Va.—Dr. Wyatt Earle Roye, Richmond.

Johnston Memorial Hospital, Abingdon, Va.—Drs. Hugh Benton Brown, Jr., Emory; and Cyrus Leslie Walton, Jacksonville, N. C.

St. Vincent's Hospital, Norfolk, Va.—Drs. Harold Irvin Amory, Hampton; Ira Lionel Hancock, Jr., Richmond; Carl William LaFratta, Richmond; and Edward Marvin Mann, Elizabeth City, N. C.

U. S. Marine Hospital, Norfolk, Va.—Drs. Tyler Robert Boling, Jr., Burkes Garden; Grant Roosevelt Elliott, Richmond; and Otis Gardner King, Arcola, N. C.

Norfolk Protestant Hospital, Norfolk, Va.—Drs. Bob Lewis Field, Fredericksburg; Dominick Jeremiah Foglia, Brooklyn, N. Y.; James Clarence LeFon, Glen Allen; and George Howard Salomonsky, Richmond.

Roanoke Hospital, Roanoke, Va. — Dr. Charles Oliver Moody, Norfolk.

South Boston Hospital, South Boston, Va.—Dr. Frank Wilson Hewlett, Richmond.

Norwegian Hospital, Brooklyn, N. Y.—Dr. Antonio Acosta-Velarde, San Juan, Porto Rico.

Christian Hospital, St. Louis, Mo.—Dr. Jay Bigelow Bailey, Davy, W. Va.

San Diego County General Hospital, San Diego, Calif.—Dr. William Heath Ball, Raleigh, N. C.

Union Memorial Hospital, Baltimore, Md.—Dr. Lawrence Lincoln Beall, Durham, N. C.

Georgia Baptist Hospital, Atlanta, Ga.—Dr. Jackson Murrell Bowling, Durham, N. C.

Bluefield Sanatorium, Bluefield, W. Va.—Dr. Paul Jette Bundy, Lebanon.

Wisconsin General Hospital, Madison, Wis.—Drs. Robert Carlyle Bunts, Pulaski; and Edward Dewey Hudson, Roanoke.

St. Elizabeth's Hospital, Washington, D. C.—Drs. E. Gaine Cannon, Pickens, S. C.; and Robert Orrus Glenn, Sugar Grove, N. C.

Central Dispensary and Emergency Hospital, Washington, D. C.—Dr. Julius Caplan, Portsmouth.

Hazelton State Hospital, Hazelton, Pa.—Drs. Oscar Winfred Carper, New Castle; and James Alfred Gooch, Richmond.

Conenaugh Valley Memorial Hospital, Johnstown, Pa.—Dr. Meyer Cohen, Richmond.

St. Lawrence Hospital, Ogdenburg, N. Y.—Dr. Frank Philip Coleman, Collierstown.

Southern Pacific Hospital, San Francisco, Calif.—Dr. Fred Glenn DeBusk, Saltville.

Arnot-Ogden Memorial Hospital, Elmira, N. Y.—Dr. Duke Arthur Dent, Charleston, W. Va.

Bryn Mawr Hospital, Bryn Mawr, Pa.—Dr. James Murray Ellzey, Jr., Philadelphia, Pa.

Ellen Fitzgerald Hospital, Monroe, N. C.—Dr. James Grady Faulk, Unionville, N. C.

North Carolina Baptist Hospital, Winston-Salem, N. C.—Dr. Olin Grady Fritz, Welcome, N. C.

U. S. Navy—Dr. James Elijah Fulghum, Richmond.

Lebanon Hospital, New York, N. Y.—Dr. Victor Goodside, Bronx, N. Y.

Hinton Hospital, Hinton, W. Va.—Dr. Roy Overt Halloran, Hinton, W. Va.

Presbyterian Hospital, Pittsburgh, Pa.—Dr. Sylvester Sutton Hamilton, Jr., Punxsutawney, Pa.

Santa Barbara Cottage Hospital, Santa Barbara, Calif.—Dr. Thomas Moore Hearn, Jr., Richmond.

Cumberland Hospital, Brooklyn, N. Y.—Drs. Belmont Augustus Helsabeck, Rural Hall, N. C.; and William Garland Talmadge, Petersburg.

Utica State Hospital, Utica, N. Y.—Dr. Cyril James Crozier Kennedy, Richmond.

Charleston General Hospital, Charleston, W. Va.—Drs. Seward William Jabaut, Richmond; Clarence Emerson Lewis, Charleston, W. Va.; Curtis Garland Power, Martinsburg, W. Va.; and John Nathan Reeves, Bridgewater.

Memorial Hospital, Philadelphia, Pa.—Dr. Samuel Meyer Klein, Richmond.

Asheville Mission Hospital, Asheville, N. C.—Dr. Newton Faris Lancaster, Hendersonville, N. C.

Unity Hospital, Brooklyn, N. Y.—Dr. Hermann Joseph Lukeman, Saltville.

Boston City Hospital, Boston, Mass.—Dr. Jesse McCall, Tazewell.

Wilkes-Barre General Hospital, Wilkes-Barre, Pa.—Dr. Edward Henry Major, Morgantown, W. Va.

Wheeling Hospital, Wheeling, W. Va.—Drs. Joseph Alexander Markley, Morgantown, W. Va.; and John Herman Murphy, Wheeling, W. Va.

Chesapeake and Ohio Hospital, Huntington, W. Va.—Dr. Herman Edwin Martin, Christiansburg.

James Walker Memorial Hospital, Wilmington, N. C.—Drs. Laurie Walker Moore, Marshallberg, N. C.; and Victor Thaddeus Sullivan, Wilmington, N. C.

City Memorial Hospital, Winston-Salem, N. C.—Drs. William King Newton, Fountain, N. C.; John Montgomery Preston, Richmond; and Albertus Ula Stroupe, Jr., Mt. Holly, N. C.

Holy Name Hospital, Teanneck, N. J.—Dr. Yates Shuford Palmer, Lawndale, N. C.

Lennox Hill Hospital, New York, N. Y.—Dr. Thomas Blackburn Payne, Fredericksburg.

Gallingher Municipal Hospital, Washington, D. C.—Drs. Fred Taylor Renick, Calloway; and Clifton Ross Titus, Lucketts.

New Rochelle Hospital, New Rochelle, N. Y.—Dr. Adolfo Sanchez, Mayaguez, Porto Rico.

Hospital Santo Tomas, Panama City, Republic Panama—Dr. Julio Jimenez Sierra, Panama City, Republic of Panama.

St. Michael's Hospital, Newark, N. J.—Dr. Frank Smith, Oxford, N. C.

Hillman Hospital, Birmingham, Ala.—Dr. Thomas Griffin Synnott, Embry, Miss.

Other graduates in medicine are:

Dr. Jacob G. Jantz, Richmond.

Dr. Harold Wilbur Miller, Woodstock.

Dr. William Howard Riheldaffer, Fairmont, W. Va.

University of Virginia

As usual the Department of Medicine held its final exercises in conjunction with those of other departments of the University of Virginia. Before the baccalaureate sermon formally opened the exercises incident to the graduation of the 1931 classes, an informal start was made with dances which were held in the Memorial Gymnasium on the evenings of June 12th and 13th. Dr. Reinhold Niebuhr, of the Union Theological Seminary of New York, preached the sermon on Sunday, June 14th. That evening, according to custom, there was an organ recital in the McIntire Amphitheatre.

Monday was alumni day. A business meeting of the association was held during the morning, followed by a luncheon tendered the graduates. Dr. George H. Denny, president of the University of Alabama and an alumnus of the class of '97, welcomed members of the graduating class into the alumni association. The alumni ball was danced that evening.

On June 16th, a memorial to Dr. Edwin A. Alderman was presented by the graduates, as their class gift. Preceding the final exercises in the afternoon, there was a band concert on the lawn by the Charlottesville Municipal band. Following the exercises at which the diplomas were awarded the graduates in the various departments, an address was made by the Honorable John Wood Fishburne. Immediately after this, there was a reception in Madison Hall for the graduates, their relatives and guests, with the final ball starting at 10 P. M. that evening.

The following is a list of the forty-seven graduates from the Department of Medicine, with hospital appointments:

University of Virginia, University, Va.—Drs. John Jacquelin Ambler, Richmond; William Ambrose Brown, Jr., Portsmouth; Alexander Gordon Gilliam, Petersburg; Angus Hinson, Abbeville, Ala.; Joseph William Houck, Harrisonburg; Arthur Mazyck, Jr., Darlington, S. C.; Lodwick Sterrett Meriweather, Lynchburg; William Henry

Parker, Covington; and Jack Spencer, Lynchburg.

Elizabeth Buxton Hospital, Newport News, Va.—Drs. Dewey Loring Anderson; and Bliss King Weems, Greeneville, Tenn.

Memorial Hospital, Richmond, Va. — Dr. Dawson Edward Watkins, Jr., Fork Union.

St. Elizabeth's Hospital, Richmond, Va.—Dr. Carlyle Gregory Flake, Richmond.

Western State Hospital, Staunton, Va.—Dr. Emilie Caroline Strohman, Orangeburg, S. C.

Church Home and Infirmary, Baltimore, Md.—Drs. Howard Hicks Ashbury, Baltimore, Md.; Albert Chesterfield Stutsman, Roanoke; and Peter Allen Haley, II, Charleston, W. Va.

Iowa Methodist Hospital, Des Moines, Iowa—Drs. Barloe Bailey, Saltville; and John Thomas James, Galax.

Baltimore City Hospital, Baltimore, Md.—Drs. Philip Bress, Norfolk; Samuel Howard Garst, Blountville, Tenn.; and Asa Elmore Seeds, Waverly.

Charity Hospital, New Orleans, La.—Drs. Charles Crawford Canada, Grottoes; and Charles Fuller Fincheloe, Jr., East Falls Church.

Johns Hopkins Hospital, Baltimore, Md.—Dr. George Daniel Capaccio, Brooklyn, N. Y.

Lakeside Hospital, Cleveland, Ohio—Dr. William Morgan Chew, Waynesboro.

Harper Hospital, Detroit, Mich.—Dr. John Bradley Cousar, Bishopville, S. C.

The Mason Clinic, Seattle, Wash.—Drs. Adam Tyree Finch, Jr., Chase City; Walter Lee Thomas, Jr., Lynchburg; and William Massie Whitehead, Lovingston.

Peter Bent Brigham Hospital, Boston, Mass.—Dr. Robert Earle Glendy, Dublin.

Union Memorial Hospital, Baltimore, Md.—Drs. Meyer Goldstein, Portsmouth; and Samuel Butler Grimes, Baltimore, Md.

Orange Memorial Hospital, Orange, N. J.—Dr. Winthrop Huntington Hall, Cranford, N. J.

Tampa Municipal Hospital, Tampa, Fla.—Dr. Ruth Schwarz Hart, Winter Park, Fla.

U. S. Public Health Service—Dr. Clifton Keck Himmelsbach, Drexel Hill, Pa.

Duke University, Durham, N. C.—Dr. Harry Gilman Hudnall, Covington.

Lincoln Hospital, New York, N. Y.—Dr. Herman Michel Levine, New York, N. Y.

New York Post-Graduate Hospital, New York, N. Y.—Dr. Thomas Preston McKee, Saltville.

Massachusetts General Hospital, Boston, Mass.—Dr. Margaret Elizabeth Moriarty, Newton, Mass.

St. Vincent's Hospital, New York, N. Y.—Dr. Timothy John Nash, Jr., New York, N. Y.

University Hospital, Iowa City, Iowa.—Dr. Eldridge Cook Simmons, Petersburg.

Garfield Memorial Hospital, Washington, D. C.—Dr. Melville Dwight Smith, Johnson City, Tenn.

Cumberland Hospital, Brooklyn, N. Y.—Dr. Ben Steingold, Norfolk.

Instructor in Pathology, Medical Department, University of Virginia, University, Va.—Dr. John Hamilton Soherer, Richmond.

Other graduates of this class are:

Dr. Harry Raphael Kelly, Union City, N. J.

Dr. Weldon Merritt Harloe, Matoaka, W. Va.

Arrangements Progressing for Roanoke Meeting of State Society.

Ample space will be available for the scientific and commercial exhibits at the sixty-second annual meeting. The Patrick Henry Hotel, which is the official headquarters of the state meeting, October 6th to 8th, has reserved a large space on the mezzanine and exhibitors are urged to communicate with the proper persons in order that spaces may be assigned early.

The scientific exhibit will be given an outstanding place and the local chairman is anxious for the number of exhibits to be large.

Those desiring booths for commercial exhibits should communicate with Dr. A. P. Jones. Dr. W. P. Jackson is chairman of the local Scientific Exhibit Committee.

While Dr. H. H. Trout, chairman of the committee on hotels, states that Roanoke will be able to care comfortably for all who attend our meeting, he urges that members make reservations promptly. Names of hotels with rates were published in the June issue of the Monthly. It is suggested that any one wishing to make reservations should write direct to Mr. Fay Thomas, manager of the Patrick Henry Hotel, stating the kind of accommodations wanted, though Dr. Trout will be glad

to help in any way possible. In this connection, it might be well to state that through inadvertence, Dr. Trout's name was given as general chairman in the last issue of the MONTHLY. The general chiarman is Dr. W. L. Powell.

Married.

Dr. William Lett Harris and Mrs. Gertrude E. Burgess, both of Norfolk, Va., in New York City, June 20th.

Dr. Claude C. Coleman, Richmond, Va., and Mrs. Ruth Threadcraft Putney, of Middlesex County, Va., June 16th.

Dr. Frank E. Handy, Appalachia, Va., and Miss Ruth Harrison Smith, of Big Stone Gap, Va., June 17th.

Dr. Robert Tunstall Peirce, Jr., Newport News, Va., of the class of '29, University of Virginia, and Miss Ruth Tinsley Hurt, Kenbridge, Va., June 11th. Dr. Peirce interned at St. Elizabeth's Hospital, Richmond, and is now pursuing a special course at John Hopkins Hospital, Baltimore.

Dr. Grant R. Elliott, of the class of '31, Medical College of Virginia, and Miss Beatrice V. Holland, of Windsor, Va., June 6th. After July the 1st, they will be at home in Norfolk, Va., where Dr. Elliott will be stationed at the U. S. Marine Hospital.

Dr. Clifton Keck Himmelsbach, Drexel Hill, Pa., of the class of '31, University of Virginia, and Miss Virginia Martin, University, Va., recently.

Dr. Oscar William Cranz, of the class of '31, Medical College of Virginia, and Miss Flora Elizabeth Jett, of Reedville, Va., June 4th. They will make their home in Richmond, where Dr. Cranz has been appointed to an internship at Stuart Circle Hospital.

Dr. Cyril James Crozier Kennedy, of the class of '31, Medical College of Virginia, and Miss Edna Rose Wright, Blackstone, Va., recently. After July 1st, they will make their home in Utica, N. Y., where Dr. Kennedy will be stationed at the Utica State Hospital.

Dr. Israel Felman, Pittsburgh, Pa., and Miss Anne Clayman, Richmond, Va., in Washington, D. C., June 14th. Dr. Felman is an alumnus of the University of Virginia in the class of '27.

Dr. Samuel Byron Pope, Jr., Norfolk, and Miss Emma Lucile Ryerson, Richmond, June 24th. Dr. Pope graduated from Medical College of Virginia last year and has just completed an internship at Norfolk Protestant Hospital.

Revolutionary War Physician Honored.

A bronze tablet was unveiled in Alexandria, Va., on June 14th, in honor of Dr. William Brown, a Revolutionary War physician. The ceremonies took place at the old home of Dr. Brown and honored also his grandson of the fourth generation, Lt. Wilmarth Brown, who was killed in the line of duty while in France during the World War. The exercises were held on Lt. Brown's birthday and the tablet was draped with the flag which covered his casket when brought to Arlington Cemetery.

Dr. Brown was physician general and director of hospitals, middle department of the Continental Army, and was physician for nearly twenty years to the Washington family. The tablet was unveiled by Alexander Gustavus Brown, III, of Richmond, a direct descendant of Dr. Brown and a son of Dr. Alexander G. Brown, Jr., of this city. Addresses were made by Surgeon General Robert U. Patterson of the Army and Judge Josiah Van Orsdel, past president, Sons of the American Revolution. Dr. J. Allison Hodges, president of the Medical Society of Virginia, was prevented from being present by illness, but his address was read by Dr. Llewellyn Powell, of Alexandria.

The inscription on the tablet, which was prepared by the War Department, is as follows:

Residence
of
GENERAL WILLIAM BROWN, M. D.
Born 1748. Died 1792
Physician General and Director of Hospitals.
Middle Department, Continental Army.
Charter Member, Society of Cincinnati.
Author of First American Pharmacopoea.
President of Board of Trustees of Alexandria
Academy, At General Washington's request.
Personal Physician for Many Years and Intimate
Friend of General George Washington,
Who Visited in this House.
Tablet erected in 1931 Ceremonies Conducted By
By His Descendants. The Washington Society,
Inscription by War Department. June 14, 1931.

Following the exercises, the home was opened by the present owners and the public allowed to inspect it. Nine windows of the house which have been boarded up since the Civil War, when they were closed on account of a glass tax, will be opened in the near future.

New Crippled Children's Hospital.

The new $300,000 Wisconsin Orthopedic Hospital at Madison is to be opened early this coming summer, according to a report from Wisconsin. It will have a solarium, open sun porch, playroom, and rooms for occupational therapy. One of the most sensible ideas carried out in this hospital is the reservation of the ground floor for patients who are able to get out of doors. The building has a capacity of 113 beds, which will make hospital care available to many crippled children for whom facilities heretofore have been lacking.

Third Pan American Medical Congress.

The U. S. Public Health Service announces that the Third Pan American Medical Congress will be held in the City of Mexico, July 26 to 31, 1931. This Congress is being held under the auspices of the Department of Public Health of the Mexican Government. The U. S. State Department has decided that our Government will participate in this Third Pan American Medical Congress and has designated several American physicians as delegates on the part of the United States to this Congress.

For further information, address Dr. Francisco de P. Miranda, Secretary of the Congress Committee of the III Pan American Medical Congress, Departmento de Salubridad, Mexico, D. F.

University of Virginia News.

Dr. Allen Fiske Voshell, Associate Professor of Orthopedic Surgery, has accepted the Professorship of Orthopedics in the Medical School of the University of Maryland. He will assume his new duties at the beginning of next session. His successor at the University of Virginia has not yet been appointed.

Dr. Vincent Archer read a paper on "Roentgen Diagnosis of Neoplastic Disease" before the Post-Graduate Medical Society of Southern Virginia at Petersburg on May 19th.

At the meeting of the Gastro-Enterological Section of the American Medical Association in Philadelphia on June 10th, Drs. Vincent Archer and C. B. Morton presented a paper on "Ascariasis: Clinical and Roentgenological Considerations."

On May 19th Dr. Edwin P. Lehman spoke on "The Diagnosis of Carcinoma of the Large Bowel" before the Clinical Meeting of the physicians of the Fourth Councilor District, Medical Society of Virginia, held at Petersburg in conjunction with the Post-Graduate Medical Society of Southern Virginia and the Department of Clinical Education, Medical Society of Virginia.

Dr. D. C. Smith read a paper on "Jugular Compression, an Adjunct in the Treatment of Syphilis of the Central Nervous System" before the American Dermatological Society which met in Toronto, Canada, from June 15th to 17th.

The following members of the Medical Faculty attended the meetings of the American Medical Association in Philadelphia from June 9th to 12th: Drs. Neff, Royster, Wilson, Morton, Maxcy, Swineford, Woodward, and Smith.

Dr. J. H. Neff attended the meetings of the American Association of Genito-Urinary Surgery at Buck Hill Falls Inn, Pennsylvania on June 4th. He presented a paper on "Massive Hemorrhagic Cyst in a Wilms' Tumor of the Kidney in an Adult."

At the Final Exercises on June 16th, forty-seven students were graduated with the degree of Doctor of Medicine.

Medical College of Virginia News.

The Medical College of Virginia announces the following additions to the faculty for the year 1931-32: Dr. C. H. Beach, instructor in first aid; Dr. A. H. Bell, assistant in surgery; Dr. Meade S. Brent, instructor in nervous and mental diseases; Dr. A. N. Chaffin, assistant in surgery; Dr. W. A. Farmer, assistant in surgery; Dr. John R. Gill, instructor in nervous and mental diseases; Dr. J. B. Graham, instructor in surgery; Dr. H. C. Henry, associate in nervous and mental diseases; Dr. R. C. Hoge, instructor in surgery; Dr. Theodore Kohn, assistant in medicine; Miss Alis Loehr, assistant in biochemistry; Dr. R. Angus Nichols, Jr., instructor in surgery; Dr. H. M. Richardson, instructor in gynecology; Dr. E. H. Williams, assistant in pediatrics; and Dr. J. N. Williams, instructor in nervous and mental diseases.

The following promotions of faculty members are also noted: Dr. W. P. Barnes, from instructor to associate in surgery; Dr. W. B. Blanton, from assistant professor to associate professor of medicine; Dr. R. H. Courtney, from associate in to assistant professor of ophthalmology; Dr. D. S. Daniel, from instructor to associate in surgery; Dr. B. H. Gray, from associate professor of obstetrics to professor of clinical obstetrics; Dr. Webb B. Gurley, from associate in to assistant professor of operative dentistry; Dr. I. T. Hardy, from assistant in operative dentistry to instructor in exodontia and operative dentistry; Dr. W. H. Higgins, from associate professor of medicine to professor of clinical medicine; Dr. John S. Horsley, Jr., from associate in to assistant professor of surgery; Dr. J. G. Lyerly, from associate in to assistant professor of neurological surgery; Dr. Harry Lyons, to professor of periodontia; Dr. W. A. Ratcliffe, from assistant in to instructor in operative dentistry; Dr. A. C. Sinton, from associate in to assistant professor of gynecology; Dr. J. H. Smith, from associate professor of medicine to professor of clinical medicine; Dr. G. H. Snead, from instructor to associate in otolaryngology; Dr. W. R. Southward, from assistant to instructor in surgery; Dr. M. G. Swenson, from associate professor to professor of prosthetic dentistry; Dr. R. W. Vaughan, from instructor to associate in otolaryngology; Dr. E. W. Wallerstein, from associate in to assistant professor of otolaryngology; Dr. H. Hudnall Ware, Jr., from associate in to assistant professor of obstetrics; Dr. B. W. Wilkinson, from assistant to instructor in surgery; and Dr. R. A. Williams, from assistant to instructor in prosthetic dentistry.

Dr. Fred J. Wampler, professor of preventive medicine at the Medical College of Virginia, who has been in India on leave during the academic year now closing, has sailed for this country and will resume his duties at the college in September. Dr. Wampler sailed from Calcutta on May 1st and is expected to arrive in San Francisco on June 17th.

The inauguration at the Medical College of Virginia of a special obstetrical delivery service intended primarily for the benefit of persons of moderate means has been announced. The proposed service will be in charge of Dr. H. Hudnall Ware, Jr., of the college faculty. The service will undertake to provide for seventy-two hours of hospital care for mother and child and will offer the regular obstetrical staff's services. After care in the home will also be given when necessary.

Post-graduate clinics for practicing physicians were held at the Medical College of Virginia on May 29th and 30th in cooperation with the Department of Clinical Education of the Medical Society of Virginia. These were well attended.

Post-graduate clinics for negro practitioners were given at the St. Philip Hospital by the Medical College of Virginia June 15th through June 27th. The purpose of the clinic was to give intensive instruction for a two weeks' period to negro physicians, primarily from Virginia, in the fields of medicine, pediatrics, obstetrics and surgery, as related to general practice. The clinic opened with twenty-one in attendance.

The out-patient department of the Medical College of Virginia had the busiest May in the history of its work last month. There were 3,893 visits made to the clinic during the month; the average number of patient visits per day was 156, of which number 42 per cent were white patients and 58 per cent negroes.

The St. Philip Hospital school of nursing dormitory, a separate unit of the Medical College of Virginia for negro nurses, is now nearing completion and is expected to be ready for occupancy by August 1st. This building is being built just across the street from the St. Philip Hospital, operated exclusively for negro patients.

At the commencement exercises of the Medical College of Virginia this year, 176 graduates were awarded diplomas in the four schools of the college, medicine, dentistry, pharmacy, and nursing. Of this number ninety-four received the degree of doctor of medicine. Mr. Junius P. Fishburn, president of the *Times-World* Corporation of Roanoke, gave the commencement address. Two honorary degrees were awarded, that of doctor of science to Dr. William L. Keller, of Washington, D. C., and that of graduate in phar-

macy to Mr. Roy Childrey, of Richmond, Va., a member of the faculty of the school of pharmacy.

News Notes from Duke Hospital and Medical School.

The spring quarter of the Duke University School of Medicine ended June 13th and the summer quarter commenced June 22nd. For the summer quarter, twenty-nine students registered in the second year class, six in the junior and three in the senior class. Two of the second-year students will take work during the summer quarter at the University of Cambridge, Cambridge, England, and the Royal College of Surgeons, Edinburgh, Scotland. Four of the senior students will spend the summer quarter at Rotunda Hospital, Dublin, Ireland, and the National Hospital, Queen Square, London, England.

On June 16th, sixteen students of the first-class in the School of Nursing, who had creditably finished their six months' preliminary course, received their caps at the morning exercises in the Chapel. Following the capping program, they were photographed outside the entrance of the hospital.

On May 25th, Cabel Ward (surgery) was opened for patients, which increased the number of beds available for patients to 254.

Dr. Horsley Honored.

At the commencement exercises of the University of Richmond, this year, Dr. J. Shelton Horsley, Richmond, Va., was awarded the honorary degree of LL.D., in recognition of his contributions to the science of surgery.

Dr. Blanton Also Honored.

Dr. Charles Armistead Blanton, Richmond, Va., was also the recipient of the honorary degree of LL.D. from Hampden-Sidney College, this year, in recognition of his great service to that institution.

The American Medical Association

Held its meeting in Philadelphia, June 9th to 12th, under the presidence of Dr. William Gerry Morgan, of Washington, D. C. At this time, Dr. E. Starr Judd, of Rochester, Minn., succeeded to the presidency. This was a splendid meeting with an attendance of over 7,000, at least 150 of these being from Virginia.

The scientific exhibits were excellent. Among these was one by Dr. W. Ambrose McGee, of Richmond, Va., on whooping cough. Some of the other attractive exhibits were those showing growing tissue with the microscope, and showing a late post mortem of a girl who died five years ago from the effects of swallowing radium while painting clocks and watches. There was still enough radium in the bone to show in the photograph.

An historical exhibit which should be of especial interest to Virginians was one by Dr. Russell Haden, now with Dr. Crile at Cleveland, but formerly professor of medicine at the University of Kansas. This included an item which showed that Dr. R. H. Lemmon, father of Dr. Robert Lemmon who is surgeon at V. M. I., had an interesting article on blood counts which appeared in the February, 1874, issue of the VIRGINIA MEDICAL MONTHLY. Dr. Haden, himself originally from Virginia, said that this was the first article published on this subject in America.

Altogether, this was a splendid meeting. New Orleans was selected as the 1932 place of meeting and Dr. E. H. Cary, of Dallas, Texas, was unanimously elected president-elect.

Shriners' Hospital for Crippled Children in Honolulu Busy.

Since the opening last November of the new Shriners' Hospital for crippled children in Honolulu, 1,347 children have been admitted for treatment and discharged, reports a recent number of the *American Journal of Diseases of Children.*

Re-Appointed Member of State Health Board.

Dr. Lawrence T. Royster, University, Va., has just been re-appointed by Governor Pollard as a member of the Virginia State Board of Health for a period of seven years.

The West Virginia State Medical Association

Held a most excellent meeting, with a large attendance, in Clarksburg, in May, under the presidency of Dr. C. H. Maxwell, of Morgantown. It was decided to hold the 1932 meeting in Parkersburg. Dr. Albert H. Hoge, Bluefield, was elected president, and Mr. Joe W. Savage, Charleston, was re-elected executive secretary.

Pennsylvania's Rural Health Buses.

The Pennsylvania Department of Health, for six successive years, has sent to the rural sections of the State, motor cars fully equipped for the health examination of infants and young children. Last summer, reports the State's Bureau of Child Health, it sent two

cars to certain counties in the eastern part of the State, each car having a staff of two physicians, two dental hygienists, and two nurses. The cars were driven by medical students specially trained to give vision tests to five and six year old children. Over 8,000 children were examined, and 3,426 were referred for treatment to the family physician. Between 6,000 and 7,000 children had their teeth cleaned, and over 4,000 were recommended for treatment to local dentists.

Captain J. B. Mears, M. C., U. S. N.,

Has just been transferred from the U. S. Naval Training Station, at San Diego, Calif., to U. S. Naval Hospital, at Guam, M. I.

Important Meeting.

Dr. R. D. Bates, councilor for the First Congressional District, announces that there will be a meeting on Public Relations for that District in West Point, on Wednesday, July 15th, at 11 A. M. Local secretaries will advise members as to the hall of meeting.

This is a most important meeting and should be largely attended. It will be addressed by Drs. G. F. Simpson and W. O. Bailey of the Public Relations Committee of the Medical Society of Virginia.

Hospital Care for Negro Crippled Children.

A new Duke memorial building for Negro crippled children was recently dedicated at the North Carolina Orthopedic Hospital, Gastonia. The Hampton, Va., *Southern Workman* states that its erection was made possible by a bequest for the purpose in the will of Benjamin N. Duke.

Graduate Fortnight of the New York Academy of Medicine Open to the Profession.

The disorders of the circulatory system which have in the last decade placed "heart disease" in the forefront of the principal causes of death will constitute the theme of the Fourth Annual Graduate Fortnight of The New York Academy of Medicine.

This graduate course of instruction will consist in a series of lectures and clinical demonstrations, concentrated in a period of two weeks from the 19th to the 30th of October, 1931.

Lectures will be delivered evenings in the auditorium of The New York Academy of Medicine, 2 East 103rd Street, New York City. Clinical demonstrations will be held during afternoon in twelve of the leading hospitals of the city. The demonstrations will be in charge of teaching clinicians and will be organized so that those participating will have the full benefit of individual contact with both demonstrator and patient.

An outstanding feature of the 1931 Graduate Fortnight will be the anatomical, bacteriological, and pathological exhibition of specimens and research material bearing upon the subjects dealt with in the evening meetings and clinical demonstrations.

This exhibit will be housed in the Academy and will be open for leisurely study. A number of the exhibited items will be demonstrated on schedule and subjected to group discussion.

The profession of the country is invited to attend and to participate in the Graduate Fortnight. *There is no charge for attendance at any of the clinics or meetings, but registration for the clinical demonstrations is required.*

A complete program and registration blank for the clinics and demonstrations may be secured by addressing the New York Academy of Medicine, 2 East 103rd Street, New York City.

Gorgas Institute Essay Contest.

The judges of the Third Annual Gorgas Memorial Essay Contest have announced the winners of State awards in the contest, open to juniors and seniors in public, private and parochial high schools of the country. This was participated in by students in forty-three states. High school winners were chosen by faculty committees, and a Gorgas medal was recently presented to each high school winner. From these school winners, the state judges selected the state winners, and those eligible have been awarded a $20 cash prize. The state prize-winning essays were thus made eligible for the national prize of $500, which Admiral Cary T. Grayson, President of the Gorgas Memorial Institute, was to present to the winner in Washington, D. C. on June 26th.

The Virginia prize was awarded to Rose Elizabeth Hulcher, of Cathedral School, Richmond.

The contest, dealing with a health topic, is conducted each year under the direction of the Gorgas Memorial Institute of Washington, D. C., and is made possible through the generosity and interest of Mr. Charles R. Walgreen, of

Chicago, Ill. The subject of this year's contest was "Keeping Fit: The Gorgas Program of Personal Health."

The Blind in India.

Conditions among the blind in India and the great lack of medical facilities for the cure of eye diseases in that country are described by C. G. Henderson, President of the All India Blind Relief Association of Bombay, India, in the summer issue of *The Sight-Saving Review* published by the American National Society for the Prevention of Blindness.

The number of blind in India, according to Mr. Henderson, is approximately 1,750,000, and the number who suffer from seriously impaired vision is more than 4,000,000. He estimates that in economic loss blindness and partial blindness costs India at least $65,000,000 a year.

The number of oculists in India is notoriously small. There are four major ophthalmic hospitals in the country; some few other hospitals have ophthalmic branches, and there are a certain number of dispensaries at which eye work is done; and some of the medical missionaries are oculists. There are also private practitioners but, on the whole, the number of eye doctors is greatly inadequate. Much of the blindness that prevails is preventable, but unfortunately is not prevented; a great deal of the existing blindness is actually remediable, but is not remedied.

Dr. William C. Stephenson, Jr.,

Of the class of '29, University of Virginia, is opening offices in Medical Arts Building, Roanoke, August 1st, and will be engaged in general practice.

The Association of American Physicians,

At its meeting in May, elected Dr. Thomas B. Futcher, of Baltimore, as president; Dr. G. Canby Robinson, New York, vice-president; and Dr. James H. Means, Boston, secretary. The 1932 meeting will be held at Atlantic City, N. J., May 3rd and 4th.

Dr. Thomas Latane Driscoll,

Richmond, Va., has been commissioned a major in the medical reserve corps of the U. S. Army, the appointment being effective the later part of May.

Child Marriages in New York State.

News comes from Albany that in thirty-three marriages contracted in New York State in 1930 the brides were only fourteen years of age; in 198 marriages they were fifteen years old. Eleven bridegrooms were only sixteen, and eighty-four were seventeen. Almost all these boys and girls were native-born whites. A total of 2,838 brides and 2,515 bridegrooms married during the year were under the age at which marriage may be contracted without the consent of the parents—eighteen years for girls and twenty-one for boys.

First Medical Treatise on Children.

The first work on the medical care of children that has come down to us, according to Dr. George F. Still, of London, dates back to the fifth century, B. C., being a treatise by the Greek physician Hippocrates "On Dentition."

Dr. Griffith Honored.

An unusual honor was paid Dr. R. S. Griffith, of Waynesboro, Va., recently, upon his reaching the seventieth milestone in life. The local newspaper featured the occasion and published a beautiful tribute in the form of a poem from one of his old friends, the Rev. M. L. Fearnow, a former Methodist pastor there. Dr. Griffith has been in practice for forty-seven years, forty years of which have been spent in Basic, now part of Waynesboro, Va. He is loved and respected by scores who know him for his ministrations to rich and poor alike. The Griffith-Newman Post of the American Legion was named for his son, whose life was given in the World War and the doctor is an active legionnaire and booster for his home town.

Double Compensation for Injured Child Workers.

The Governor of Pennsylvania has recently signed a bill providing for double compensation for children injured while illegally employed. By this legislative act the State has given its children better protection against employment under the legal age and in forbidden dangerous occupations.

Loan Fund for Medical and Dental Care.

The cooperation of Oakland County, Mich., with the Children's Fund of Michigan has made a loan fund available to county residents who need assistance in obtaining medical or dental care for their children, reports the *Journal of the American Medical Association.* Application for a loan is made to the school

principal, who has the claim investigated. If the application is approved the family physician or dentist is authorized to give the needed treatment. All fees are paid by the treasurer of the fund directly to the physician or dentist on completion of the service. The parent signs a non-interest-bearing note for the amount and makes payments on a weekly or monthly basis.

Welfare Work for English Families at War Cemeteries in France.

The health of the families of the English gardeners at the British war cemeteries in France is now being cared for by Dr. Muriel Rippin, who was recently appointed by the Imperial War Graves Commission of Great Britain to do welfare work among them. In these families are 700 children, most of them born in France, and half of them of French or Belgian mothers. Some of the cemeteries are remote from centers of population. The doctor's field of work covers an area 120 miles long by 80 miles wide, and she travels approximately 500 miles every week, bringing to isolated women and children the maternity and child-welfare service they would receive if they were at home in England. She also acts as school medical director at the school for English children at Ypres, that famous battleground of the war.

Dr. Williams' Successor as State Health Commissioner.

Following a conference with the State Board of Health, Governor Pollard has appointed as State Health Commissioner, Dr. Warren F. Draper, an assistant surgeon general of the U. S. Public Health Service, now making his home in Arlington County, Virginia. His acceptance depends upon whether or not he will be given a leave of absence from his Federal duties and will have to await the return to Washington, very shortly, of Secretary of the Treasury, Andrew W. Mellon.

Pending Dr. Draper's acceptance, the Governor has appointed Dr. W. T. Graham, chairman of the State Board of Health, as acting State Health Commissioner.

Dr. Frederick Pilcher, Jr.,

Of the class of '29, University of Virginia, and associated with Dr. Thomas Wheeldon, Richmond, since completing his internship at the Virginia Mason Hospital, Seattle, Wash., is now at the University of Virginia Hospital for a year's service as assistant resident on the Urological Service.

Juvenile Courts for Hong Kong.

News comes from London that the establishment in Hong Kong of juvenile courts and training schools for juvenile offenders under sixteen years of age has been proposed by the Hong Kong Legislative Council. Action on the proposal, however, must await instructions from the British Colonial Office. In 1929, the last year for which the facts were known, 985 Chinese boys and 137 Chinese girls under the age of sixteen years were brought before the magistrates. Of these, 131 boys and 5 girls were sent to prison, and 433 boys were ordered to be whipped. The British Colonial Office has announced that the Government will assist the industrial school for boys now being established in the city by the Salesian Fathers.

Dr. J. B. McKee

Announces his removal from Plasterco, Va., to Glade Spring, Va.

Dr. Walter E. Vest,

Of Huntington, W. Va., was elected president of the William and Mary Club of West Virginia at an organization dinner of the alumni of the college held in Charleston on May 13th. Dr. Vest is a native Virginian and is an alumnus of the Medical College of Virginia, class of '09.

Kindergartens in Hospitals.

Kindergarten work introduced into the children's wards of many of the newer hospitals has helped to keep the little patients busy and contented by giving them something interesting to do. It helps the nurses in their own work, says a writer in *Hospital Social Service*, and also aids in establishing friendly relations with the parents.

Grace Hospital to Have Addition.

Construction has been started on a four story and basement addition to Grace Hospital, Richmond, Va. Plans for the structure are designed to provide additional bedrooms, ward rooms, operating rooms, and laboratories, and will make the hospital a complete and modern institution. The entire upper floor of the addition will be given over to elaborately designed and equipped operating rooms—two major op-

erating rooms, a minor operating room, surgeons' dressing rooms and sterilizing rooms.

The New Squibb Building.

Nearly seventy-five years ago, Dr. E. R. Squibb founded a modest pharmaceutical laboratory which was destined to become the modern institution of E. R. Squibb & Sons. Through each succeeding year the business has grown in size because it has grown in service.

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Massachusetts School Tuberculosis Program.

During the past six years 3,000 school children in Massachusetts were found by X-ray examination to be suffering from tuberculosis in some degree, and 6,500 more were in need of supervision as suspected cases. These children were among the 150,000 referred for examination to the clinics conducted by the Massachusetts Department of Health in connection with its ten-year program inaugurated six years ago for the discovery and prevention of tuberculosis in the schools. These findings indicate the value of the work.

The Medical Society of the District of Columbia,

At its annual meeting in May, elected the following officers for the ensuing year: President, Dr. Arthur C. Christie; vice-presidents, Drs. James A. Gannon and Mary O'Malley; secretary, Dr. Coursen B. Conklin (re-elected).

Dr. J. G. Storie,

Grundy, Va., is spending the summer at Rainbow Springs, N. C.

Dr. A. S. Lilly,

Who is taking a two years' course in internal medicine at the Graduate School of Medicine of the University of Pennsylvania, in Philadelphia, visited his home in Richmond, Va., recently.

Rumania's Child-Welfare Exposition.

The Children's Bureau is sending a number of pamphlets, charts, and posters to the first Rumanian child-welfare exposition, which will be held at the Park Carol, Bucharest, from April 23 to May 23, 1931. This exposition is being organized by a Society which was started by Queen Marie soon after the World War to carry on child-welfare work and which now has branches in the larger towns and in many villages in Rumania. Little or no work of this character had been done in Rumania before the war. The Rumanian Legation in Washington, states that a group of young women will later be sent from Rumania to study the child-welfare methods used in the United States.

Progressive Turkey.

Parents and the proprietors of motion-picture houses are subject to fine in Turkey if they violate the law forbidding children under six years of age to attend motion-picture theaters and children from six to twelve years of age to attend after 8 P. M. The regulation was adopted, says the *Journal of the American Medical Association*, because children were often kept for hours in the vitiated air of overcrowded theaters.

Honolulu Fights Diphtheria.

Honolulu's high death rate from diphtheria, which had been steadily increasing since 1922, was cut in half following an immunization campaign carried on by the city board of health in the late fall of 1929, according to a report of the Territorial board of health. During this 1929 campaign and a second carried on in the fall of 1930, 24,444 school and preschool children received treatments, over half of them in the younger group.

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Obituary Record

Dr. Ennion Gifford Williams,

One of the most widely known and best loved physicians of this State, died at his home in Richmond, Va., June 6th, after an illness extending over several months. He was born in Richmond, January 31, 1874. His medical education was received at the University of Virginia, from which he graduated in 1897. Several years later, he became a member of the Medical Society of Virginia and had been ever active in its interests, having served on committees, as a delegate to the American Medical Association, and as its president. Dr. Williams was appinted Virginia's first State Health Commissioner and served in this capacity for more than twenty-two years, which made him, in point of continuous service, the oldest health official in the United States. His work in behalf of public health in Virginia has attracted widespread attention and high commendation.

Dr. Williams is survived by his wife, formerly Miss Anna Heath Lassiter, daughter of the late Dr. D. W. Lassiter, of Petersburg, Va., and eight children, one of them being Dr. Ennion Skelton Williams who graduated from Medical College of Virginia a year ago.

Dr. Madison Redd Drewry,

Of Cascade, Va., and for many years a prominent Pittsylvania County physician, died suddenly June 2nd, from a brain hemorrhage. He was sixty-five years of age and graduated in medicine from the University of Maryland in 1887. Dr. Drewry had been a member of the Medical Society of Virginia for forty-four years. His wife survives him.

Dr. John Wesley Carroll,

Well-known physician and surgeon of Lynchburg, Va., died in a Richmond hospital on June 3rd, death being due to sinus trouble. He was fifty-one years of age and graduated in medicine from the University of Virginia, Department of Medicine, in 1889. Dr. Carroll was a director of the Lynchburg National Bank and a former member of the board of aldermen of that city. He had been a member of the Medical Society of Virginia for twenty-seven years. His wife and a daughter survive him.

Dr. William M. Thompson

Died at his home in Culpeper, Va., June 12th, from heart trouble. He was sixty-three years of age and a graduate of the former University College of Medicine, Richmond, Va., in 1898. Dr. Thompson had been a practicing physician in Culpeper County for more than twenty-five years. He had been a member of the Medical Society of Virginia for twenty-nine years. His wife and six children survive him.

Dr. Albert Lee Barrow,

Abingdon, Va., died March 19th, after having been in ill health for sometime. He was fifty-two years of age and graduated from the University of Maryland, School of Medicine, Baltimore, in 1903. Dr. Barrow had been a member of the Medical Society of Virginia for some years.

Dr. Cooper Dave Kunkel,

Pulaski, Va., died June 11th, at the age of eighty-three years. He graduated from the Bellevue Hospital Medical College, New York, in 1873. Dr. Kunkel had been a member of the Medical Society of Virginia for the past twenty-nine years.

Dr. Thomas Washington Evans,

Concord Depot, Va., died May 28th, after a long illness of heart trouble. He was seventy-six years of age and a graduate of the New York University Medical College in 1882. His wife and ten children survive him.

Dr. William Wilkinson Murray,

Suffolk, Va., died April 29th, aged eighty-six years. He graduated from the National University of Ireland Faculty of Medicine, Dublin, Ireland, in 1869. Dr. Murray was a Civil War veteran.

Dr. John Stewart Jamieson,

Alexandria, Va., died May 18th. He was sixty-three years of age and a graduate of the Kentucky School of Medicine, Louisville, in 1891.

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MENTAL DISEASES FROM THE STANDPOINT OF THE GENERAL PRACTITIONER.*

By J. H. BELL, M. D., Colony, Va.
Superintendent, State Colony for Epileptics and Feeble-minded.

The subject assigned me may, perhaps, be regarded as rather a large order for a fifteen minute paper. We will, therefore, without further preliminaries, plunge into the subject.

In thinking of mental diseases there are four major conditions which obtrude themselves on one's consciousness; namely, insanity, epilepsy, mental-defectiveness, and the various psychoneuroses and psychopathic states that are sometimes included under one head as the semi-insane. These may, perhaps, be appropriately termed the Four Horsemen, as the devastation they wreak upon human society is so widespread, and the effects of this devastation so complete, as to be almost beyond human comprehension.

We may, with some profit to our understanding, view these effects from three main avenues of approach: first, the effect upon the individual; second, upon society; and third, the effect upon posterity.

The effect upon the individual is such as to render him often not only the most miserable of creatures, but also a total economic loss for the period of an average lifetime.

The effect upon society is usually to place the burden of his custodial care upon the State for many years.

The effect upon posterity is frequently to continue these defects from generation to generation through blood lines.

Mental diseases are so destructive and warping to the intelligence and judgment of the individual, and bear such an intimate relationship to crime that I feel justified in stating that the solution of crime lies not so much in the hands of the courts as in the hands of the eugenists. Indeed, the more brutal crimes are nearly always committed by persons who are insane, such as the sadists, the delusionally insane, or persons of low intelligence who are helpless in the thralls of their sexual urge and who, according to our eugenic principles, should never have been born. The habitual criminal, while perhaps exhibiting in many instances no marked evidences of any of the classical forms of insanity, is, nevertheless, usually a mental case. He is frequently psychopathic in all his attitudes and reactions, defective in judgment, will, and sensibility, and constitutes one of the great problems of our courts today.

Mental defectives and psychopathic personalities constitute a considerable proportion of the inmates of our penal institutions at this time. With a few exceptions they are petty criminals, the males engaged in theft and the females in prostitution, and are usually paupers in the generally accepted meaning of the word. Sometimes when influenced by more intelligent criminals, or acting under sadistic impulses, they come before the courts charged with graver crimes, such as rape, homicide, or highway robbery.

The obligation of the general practitioner as a guardian of the public health imposes upon him a certain duty both to the defective individual and to his social order. His duty to the defective individual is that of protecting him from himself; and that to society, of protecting society from the defective individual.

The physician should, therefore, be alert in the recognition of these abnormal or subnormal persons in his community in order that they may be properly identified, and, if necessary, placed under custody for the protection of society and posterity. Under custody, the individual may be studied with reference to his traits and detained a sufficient length of time for the performance of eugenical sterilization, or permanently if his condition is such as to require permanent custody.

May I take a moment of your time to discuss briefly a few of the major mental cases that

*Read before the Lynchburg and Campbell County Medical Society, in Lynchburg, Va., on April 23, 1931.

may come under your observation from time to time?

You are all familiar with the fairly successful business man of your town or community who has been generally regarded as a safe and conservative person in his business dealings, though perhaps always a little too talkative, a little too exuberant, a little too optimistic. Often, quite suddenly he begins an orgy of the wildest speculation; he is possessed of seemingly inexhaustible energy; he is mentally quite alert, but his judgment seems suddenly to have gone bad. His hard-earned savings, accumulated through years of conservative operation may be dissipated in a few weeks or a month, and he may bring his business to bankruptcy and his family to pauperism, still hoping to the last that some wild venture will bring him great fortune. He may proceed blithely along this primrose path for weeks or months, and then suddenly, without much warning, slump into the most desperate despondency and close the chapter by suicide or widespread homicide in his family. Now this person is afflicted with manic-depressive or circular insanity, which, in turn, he is transmitting to his offspring in some form or another of mental disease or deficiency. It recurs steadily and regularly in generation after generation of a single family line.

You are all equally familiar with the preternaturally bright boy or girl, who at the age of puberty, young manhood or young womanhood, becomes abnormally shy and seclusive. This person had always been regarded as perhaps a little odd, but this was charged up to the brilliancy of the intellect on the theory that all geniuses are supposed to be queer. The seclusion and shyness deepens until finally the individual becomes almost completely introverted. There is a disassociation of ideas; the language becomes disconnected and fragmentary, and there is a lack of continuous thought; new words not in the dictionary are formed; or sentences without apparent meaning are repeated over and over for days at a time. The patient either sits stereotyped and stuporous in one position, refuses food, and becomes mute, or moves about rapidly in wild, automatic, and meaningless activity, often repeating the same movement over and over again. He hears voices calling to him out of the Heavens, often the voice of the Almighty directing him to perform certain acts; he has vision of the angels, the devil, or of strange and peculiar creatures. He thinks that his food is being poisoned anl refuses to eat, that he has snakes in his stomach which are awaiting a favorable opportunity to strike the fatal blow. He is subject to the constant application of electrical energy from some supernatural power. Such cases are usually orientated as to time and place. They know who they are, where they are, and are familiar with persons and objects about them; and, as the name of the disease, schizophrenia—split mind—indicates, they are living half in the world of reality and half in a world created by their fancies and imaginations. Frequently the delusional ideas of these people become fixed with reference to a particular person or persons. They are then regarded as paranoidal, are frequently dangerous, and often homicidal. They may believe that a certain person or group of persons is seeking to torture them or put them to death, and the longer they consider this proposition the more fixed the delusion becomes, until finally the paranoidal schizophrenic, in the utmost desperation, slays one or a number of persons to save himself from what he thinks is certain destruction, the commission of the crime in his deranged mind being fully justified by the chain of delusional events that led up to it. Schizophrenia alone is extremely common, and constitutes the largest single group in our State hospitals today. A large percentage of these cases undergo complete mental deterioration. A few have temporary partial recoveries, but are always subject to recurrence. There is an average of one insane person to every three hundred of the general population.

In the epilepsies we have another large group of chronically afflicted persons in whom the hereditary factor is the strongest and most usual predisposing agent, there being about one epileptic to every five hundred of the general population. The disease is not difficult to recognize and usually diagnoses itself. Only a small proportion of the cases are susceptible to cure, and these only in the class of symptomatic cases in which some pathological condition exists, such as brain tumor or skull pressure that can be removed. Some preventive work has been done in babies having convulsive disorders, following prolonged birth, by spinal drainage, repeating the operation several times until the spinal fluid returns clear. But

whether or not these cases would have developed epilepsy no one can tell, as it is a well established fact that two similar pathological conditions of the same size and location in the brains of two persons may produce a convulsive disorder in one without any similar reaction in the other.

We must, therefore, go further back into the finite structure of the nervous system, and postulate a structure that is hereditarily susceptible to irritating factors within or without the body for the production of by far the larger majority of our epilepsies.

The epileptic is a great menace to those about him and to posterity. As his disease progresses he becomes morose, irritable, egotistical, suspicious, unwilling to take advice, or subject himself to discipline even for his own welfare. He is given to violent explosions of anger, periods of mental cloudiness, automatic states in which he may slay those about him and have no recollection of his act. He is usually an economic failure, and in most instances, therefore, sooner or later becomes a charge upon the State. He can be somewhat benefited by properly selected institutional treatment, and his disease may be held in abeyance for some years, but the progress of his disease is nearly always downward, and if he lives to even middle age, he usually becomes a total dement. Epileptics, as well as the insane, often marry early in life and beget defective families, which in turn become public charges.

In the psychopaths and psychoneuroses we have an extremely large class of persons who never bear their full share of the responsibilities of life. Many of the psychoneurotics become totally dependent upon their families, friends or the State. They have all sorts of imaginary ailments, are a constant nuisance and disturbing factors in many households. They are not only non-productive themselves, but must absorb for their selfish interests a certain amount of the efficiency of the other members of the household. They frequently live to a good, old age, having successfully warded off the strain of competition in living and blithely shifted it to some other member of the family. They frequently marry, and in the ascending branches of the family we find epilepsy, insanity, or feeble-mindedness springing from these neurotic parents.

As a matter of fact, inheritance is not always similar. We find the insane producing the epileptic and the epileptic producing the insane, and the neurotic or psychopathic person producing one or the other of these mental abnormalities or subnormalities.

The constitutional psychopath is a great shifter of burdens. He is often physically strong and healthy, and of sufficient intelligence to earn his own livelihood, if he would do so. He is, however, unstable in his personality and extremely untruthful and unreliable in every respect. He is usually without pride, except as to his personal appearance, in which he may be most fastidious. He is superficial and shallow, and imaginative, and will spin the most remarkable yarns, which have no basis in fact whatsoever. He will lie under oath, without qualms to his conscience, and he constitutes a most perplexing problem to our courts. He is dishonest and usually without regard for property rights of others, and I assure you, gentlemen, that against any opinion to the contrary, neither environment nor the wisdom of experience will change him one iota. He is often definitely criminalistic, and being a gifted liar with a not unpleasing personality gets by for a number of years. If apprehended and punished for his misdeeds, he, upon his release from custody, immediately begins the pursuit of his old life. He passes through the world a burden and a problem from the day that he is put into swaddling clothes until the last sad words are spoken over his recumbent form.

The feeble-minded, whom you know quite well, constitute by far the largest class of all mental cases, there being about one in every two hundred of the general population. These subnormal individuals have a maximum intelligence quotient of approximately 70 per cent, and range from that on down to idiocy. There are two definite types that I have chosen to design as the benign and the malignant. The benign have no marked anti-social traits, are pleasant in expression and demeanor, are usually willing workers under supervision, are good tempered, but if left to themselves will do nothing. They cannot plan, look ahead, or manage their own affairs with intelligence or judgment. They are at their best in the simpler forms of manual labor, in household work, shops, or farms; and if properly placed, they usually work willingly and with interest.

The malignant type, on the other hand, have

strong criminalistic tendencies. They are lazy, shiftless, and thieving; and have a tendency to wander about. Many of the women of this type become prostitutes. They are often degenerates or sexual perverts, and they constitute a serious problem at home or abroad. They may be improved under discipline, but frequently go back to their old habits of living when on their own resources. Mental deficiency is highly hereditary; we see it running through families for many generations, and by reason of its widespread dissemination amongst certain classes of our people, it constitutes one of the gravest problems that we must face today.

The financial strain on those who are bearing the burden is becoming extremely heavy. It may surprise you to learn that for the fiscal year ending June 30, 1930, there was expended on dependents, delinquents, and defectives by the State of Virginia, $5,765,478.61; by cities and counties in the State, $1,553,487.14; by private agencies in the State, $4,008,025.83, or a total of $11,326,991.58. These figures were compiled by the Department of Public Welfare, and I assume that they are correct.

In closing, I cannot refrain from mentioning a program in which we can all participate in an effort to eradicate this cancer from the body of our people.

First, such cases must be identified and brought to public notice; second, we should have larger institutions in order that, when identified, they may be brought under institutional control for the purpose of eugenical sterilization: this in particular applies to the institution for epileptics and feeble-minded (we are not doing one-fifth as much eugenical sterilization work as we should do). Third, certain amendments to the marriage laws taking into consideration the eugenic problems should be made; fourth, there should be a better social control of the defectives at large. Intelligent people should be alert to recognize situations in human relationships which are likely to be productive of defective progeny.

Some progress has been made along these various lines, and a preventive program today looks much more hopeful than it did a few years ago, but there is much yet to be done, and many years will elapse before the program can be brought to anything like a successful conclusion.

THE SMALL TOWN HOSPITAL.*

By BEVERLEY F. ECKLES, M. D., Galax, Va.

Origin

I do not know the origin of the small town hospital, but I suspect that it was an evolutionary result of those same forces that caused the first hospital to be created, being a natural consequence of the increasing need for and appreciation of hospital facilities.

I do not think it fair or just to credit the founder of a small hospital with less altruism, public spirit, or good faith than is claimed for those who have builded greater institutions serving a larger clientele.

I prefer to believe that the small town hospital exists as a merciful attempt to satisfy a widespread and insistent human demand, rather than as a commercial venture, since it is axiomatic that very few properly run hospitals make money, and that the same amount of thought, energy, and care necessary to successful hospital administration will bring far greater financial returns in any other sphere of human endeavor, except perhaps in the affairs of the Church.

Need

That there is a desperate need for these small refuges in a sea of troubles I am convinced, for during the past two years I have seen a number of patients who would certainly have died had it not been for one such hospital.

Some of these were cases in which the time element was of vital importance; others, deeply prejudiced, were only moved to action by a personal acquaintance with the hospital and a conviction of impending personal death.

Useless to talk of sending these people here or there—they simply could not have been sent, for they stoutly maintained, even with their lives, that they would rather bear the ills they had, than fly to others that they knew not of.

Not all of those so stricken escaped with their lives, but each brand plucked from the burning was a distinct achievement.

Many of them have become true believers; and some, proselyting evangels.

That the demand for the small hospital is national is abundantly evidenced by the great number of them that have sprung up throughout the land in recent years, forming one of the significant facts of present day medicine.

*Read at the meeting of the Southwestern Virginia Medical Society, at Wytheville, Va., March 19, 1931.

It is not probable that this growth would have taken place unless these institutions do perform some necessary function in a satisfactory manner; for modern life is ruthlessly practical and unless a new thing can show that it is useful, it is doomed.

The purpose of this paper is to offer in outline a personal view of the functions, opportunities, and limitations of a small town hospital, based on an intimacy of over two years, against a background of fifteen years spent as practitioner, teacher, and member of a strong group in our largest city.

Financial Aspects

The financial problem is a considerable one in any small hospital. The income from purely hospital facilities is rarely sufficient for its needs. The deficit is made up in one or more of several ways. Some hospitals are endowed; others are operated by large corporations primarily for the care of their employees; still others receive donations or allowances from their communities; a few are underwritten by large philanthropic organizations such as the Commonwealth Fund; and in another group it is necessary to use a portion of the professional fees collected for services rendered in the hospital. Often enough, as the great Samuel Johnson said of a dog walking on its hind legs, it is not a question of how well it is done, but the wonder is that it is done at all.

Charity cases are an ever present problem solved in various ways that depend largely upon local conditions. We are particularly fortunate in that our hospital has always enjoyed the confidence and cooperation of the authorities of the town and the two counties from which most of our patients come.

The reckless, irresponsible driver of the rattle-trap automobile along our highways furnishes an especial kind of trouble; and I, for one, devoutly hope that our next legislature will pass a bill making it obligatory upon all who operate automobiles to carry some form of adequate insurance against property damage and personal injury.

Relationship to Patients

Every hospital has a serious responsibility to its patients—a responsibility both economic and professional. It must see that the patient gets full value for every dollar charged, and that the charges are reasonable and just. It must also insist that the patient take his part of the financial transaction seriously, and either discharge it in full or make satisfactory arrangements to do so.

Professionally the small hospital has an unusual opportunity to inculcate the general ideas of personal hygiene, cleanliness, and prevention of disease. It should emphasize these details so that each discharged patient will not only be better for having entered there, but will take home and put into practice the new ideas gained by his hospital experience.

A humane interest in the patient should be cultivated and every legitimate means employed to gain his confidence and cooperation, for often he is ignorant, suspicious, and badly frightened. To be regarded as a case rather than as a fellow human in trouble will nullify many of our most zealous scientific attempts at his relief; while a real and lively interest in the humanities will lend great aid to everything that may be done for him.

The small hospital should never be a proving-ground and an experimental laboratory for an inexperienced, ambitious surgeon. Between a surgeon and one who just operates there is a great gulf fixed.

A grave sense of personal responsibility and accountability; an alertness against any tendency towards exploitation of our patients; an accurate knowledge of our limitations and an unwillingness to be lured beyond them; and a faithful adherence to the letter and the spirit of our oath as members of the American College of Surgeons, that we will "practice our profession with restraint" are fundamentals in the creed of every true surgeon.

Nor should the small hospital indulge in testing the merits of new and radically different therapeutic procedures. These had best be left to larger and better qualified institutions to investigate and appraise; while we, with open minds, follow Pope's old and wise advice that we

"Be not the first by whom the new is tried
Nor yet the last to lay the old aside."

Relationship to Community

The small hospital has a large opportunity for community service. It should be the servant of all, without regard to race, creed, color, or social status. It stands as a light-house of healing, and as a school-house in which the elements of hygiene, sanitation, and preventive

medicine are practiced and taught. It may properly and enthusiastically enter into the community health program, endorsing and supporting every proper movement for the conservation of health and life. A small corps of nurses available for duty outside the hospital as obstetric aides or for general duty in the home will not only prove financially profitable, but will be of great assistance to the local physicians, and will exert a powerful influence in demonstrating practical nursing and the proper care of the sick. Every legitimate means should be employed to overcome the prejudice towards hospitals that is still frequently encountered, and to cause the community to think and to speak, not of "that" hospital, but of "our" hospital.

Relationship to Physicians

In its professional relationships the small town hospital enjoys a happy situation. It should be the staunch ally and supporter of the varied programs of its local and State Health Boards. Its contact with the surrounding physicians is intimate, and should be conducted upon the highest ethical plane. I believe it is almost impossible to practice medicine in this day without some hospital connection, and that such a connection has an elevating effect upon the general level of practice. The opportunity to see a diagnosis confirmed or disproved at the operating-table; the use of the clinical and X-ray laboratories in diagnosis and prognosis; observing methods of treatment and matters of technique in use at the hospital, all exert a beneficial influence upon the thought and practice of the individual.

The hospital owes it to the referring physician to keep him informed as to the condition of his patient; and upon discharge, the case should be placed under his care for any necessary post-hospital treatment.

The hospital should be a leader in that form of post-graduate study, both within and without its staff, in which the pupils, as Osler said, out of their varied experience instruct each other.

It should encourage and aid in every proper way the attempt of members of its staff to perfect themselves in any of the specialties of modern medicine.

Staff meetings to which all physicians are welcome should be held regularly and often; at which a critical review of recent cases should be held and every attempt made to improve the professional and general services of the institution.

Relationship to Other Small Hospitals

Many conditions are problems common to all small hospitals, though they are matters of no concern to larger groups. I heartily endorse the suggestion of our colleague, Dr. J. M. Shackelford, of Martinsville, that those of us who are interested in the management of these small institutions might very profitably gather from time to time for their discussion, that each might give the other the advantage of his experience.

Limitations and Functions

The small hospital contains in embryo the germ of each of those specialties that reach their full development in the large, highly organized, modern group. It is not practicable, nor indeed is it necessary that the smaller institution try to compete with larger ones in the completeness and variety of services it offers. It should be able to make and interpret the more common tests in its clinical laboratory, and should have X-ray equipment and personnel sufficient for the usual diagnostic and therapeutic procedures. Parenthetically, X-ray interpretation should be in the hands of a physician, not a technician. It should provide its patients with clean, airy, comfortable quarters; good, suitable food; perfect sanitation; efficient and sympathetic nursing; and careful, thorough, painstaking and constant medical supervision. These constitute the irreducible minimum of requirements for its proper existence.

Tissue diagnosis; the use of Radium; many uses of the X-ray; all but the simplest and plainest diseases of the eye, ear, nose, and throat; many orthopedic, urologic, and dermatologic conditions; and those perennial unfortunates who often enough successfully defy the united diagnostic efforts of our very largest centers are illustrative examples of what is ordinarily beyond the capacity of the staff of the small town hospital.

But if these are all subtracted there remains a sphere of wide usefulness. Industrial and traumatic surgery; general surgery as general as the experience and conscience of the surgeon; obstetrics; and many conditions in the

realm of internal medicine are only a few of the fields still left open to the small hospital. In addition, one of its important functions is to serve as a sorting-station for those cases outside its power to treat. Often with proper encouragement and direction these patients will go where help may be had, and their hopeless resignation may be transformed into useful activity.

Relationship to Large Hospitals

The relation between the small hospital and the large is not a competitive but a cooperative one, resembling that between an evacuation hospital and a base in the organization of an army. The small hospital serves a clientele that the larger one can never hope to reach. It is definitely limited by its clinical opportunities as to the type and variety of service it can render. It would be a scandal if our largest institutions were no better equipped or no more able than our smallest to care for those thousands who demand special apparatus, specialized knowledge, or far-reaching laboratory studies for their diagnosis and relief.

A sympathetic understanding, cordial cooperation, and mutual respect between the small and the large hospital seem to me not only possible but necessary if each is to attain its maximum of service. Such a relationship will establish the functions, mark clearly the limitations, and broaden the opportunities of both for serving well their day and generation. We, of the outposts, shall obtain our inspiration and encouragement from observing and following the advanced footsteps of our older brethren; and on our part may occasionally furnish a fresh viewpoint or some practical observation that may prove valuable and stimulating. In such an environment one can truly practice his profession as an art, and can bring into the realm of the work-a-day and practical that beautiful spirit of Kipling's ideal, when

> "Only the Master shall praise us,
> And only the Master shall blame;
> And no one shall work for money,
> And none shall work for fame.
> But each, for the joy of the working,
> And each, in his separate star,
> Shall paint the thing as he sees it
> For the God of things as they are."

ATYPICAL PROBLEMS IN THE INJECTION TREATMENT OF VARICOSE VEINS.*

By EUGENE LOWENBERG, M. D., Norfolk, Va.

It is planned in this paper to discuss atypical problems and special points in the treatment by injection of varicose veins and of ulcer cruris of varicose vein origin. As an introduction to the subject, a brief resumé of current concepts concerning varicose veins and accepted procedures of the injection method is given.

Normal Anatomy: The venous system of the lower leg consists of two portions, the deep and superficial. The deep veins are situated among the muscles and the bones. They form the popliteal vein which is continued upwards as the deep femoral. The superficial system consists of the long and short saphenous, the former beginning at the inner side of the foot, extending upwards to join the deep femoral, two inches below Poupart's ligament; the latter commencing in the calf and entering directly the popliteal of the deep system. The superficial veins are connected with the deep by communicating veins, many in the lower leg, two or more in the thigh. All of the veins are supplied with valves with cusps arranged to maintain the upward position reached by the column of blood. The valves of the communicating veins normally allow the blood to flow from the superficial to the deep veins. It is noteworthy that there are usually valves located at the entrance of the long saphenous into the femoral and the short saphenous into the popliteal.

Pathological Anatomy and Physiology: The word "varicose" is derived from the Latin "varicosus" and means "dilated." The deep veins of the leg being supported by surrounding structures rarely give way, but the superficial unsupported systems, possibly hereditarily predisposed, readily enlarge when subjected to factors of pressure, obstruction and infection. Associated with the dilatation is an incompetent condition of the vein valves, so that the intravenous pressure is raised abnormally high and the flow of blood is retrograde in the upright position. Blood passes down instead of up the long saphenous, then through the communicating veins of the lower leg into the deep system, up through the deep femoral to the thigh, only to spill over through incom-

*Read at the sixty-first annual meeting of the Medical Society of Virginia in Norfolk, October 21-23, 1930.

I

SPECIAL EXAMINATION, CIRCULATORY DISTURBANCE OF LOWER EXTREMITIES

HISTORY

Pertinent to venous circulation (varicose veins)

Time of onset ----------
Possible cause ----------
Symptoms ----------
Ankle or leg swelling ----------
Superficial phlebitis ----------
Milk leg ----------
Elastic stocking ----------
Drug dyscrasia ----------

Pertinent to arterial circulation (arterio-sclerosis; Buerger, Raynauds Disease

Foot or calf fatigue ----------
Paresthesia ----------
Reaction to exposure to cold ----------
Reaction to injury ----------

PHYSICAL EXAMINATION

Venous circulation

Description of varices
Size ---------- Type ----------
Location ----------
Veins on tibial surface ----------
Veins on knee-joint ----------
Size of long saphenous in thigh ----------
Miscellaneous ----------

Trendelenburg's test ----------
Perthes' test ----------
McPheeters percussion pulse transmitted ----------
Direction of blood flow in isolated varices ----------

Arterial circulation

General appearance ----------
Color in dependent position ----------
Skin temperatures ----------
Edema ----------
Pulsation in Dorsalis Pedis ---------- Posterior Tibial ---------- Popliteal Artery ----------
Blanching on elevation ----------
Samuel's test ----------
Angle of circulatory efficiency ----------

SPECIAL TEST, ARTERIAL CIRCULATION

Starr's histamine reaction ----------
Intradermal salt test ----------
X-ray of arteries ----------

CONCLUSION ----------

Fig. 1.

petent valves into the saphenous and down again. The venous dilatations vary from enormous phlebectasias to tiny "hair" or "spider" varices. The most common forms are the saccular or the sinuous. Varicose veins are practically always progressive in nature, beginning in most instances in early adult life and becoming larger from year to year. Their presence, therefore, usually calls for treatment. When, in addition to the vicious cycle above described, the communicating veins in the lower leg give way, blood stasis develops, the flow of blood being reversed in both the superficial and deep systems and ulcer formation is the inevitable result.

THE INJECTION METHOD OF TREATMENT: Varicose veins were treated as early as 1853, by the injection into their lumen of coagulating substances. However, the present method of using sclerosing rather than coagulating solu-

tions has developed during the past twelve years, mainly through the efforts of Linser, Sicard and Nobl. Clinical and laboratory experiments have repeatedly demonstrated that the solutions commonly used today produce an organized clot, firmly connected by fibroblastic tissue to the inflamed intima. This clot is absorbed and the vein obliterated by a sclerosing chemical venitis. Many thousands of cases have now been treated by the method. The mortality is placed by McPheeters, in a study of 53,000 cases, at .0075 per cent. This is to be contrasted with an average mortality of ½ to 1 per cent of the operative method and the natural high morbidity of untreated varicose veins. With regard to recurrences, Kilbourne, in almost 35,000 cases treated by the injection method, noted recurrences in only 5 per cent as compared to an average return of the varices in 20 to 30 per cent following the operative method.

The Solutions: The chief solutions being used today are equal parts of 30 per cent sodium chloride and 50 per cent dextrose, 15 to 20 per cent sodium chloride, 50 per cent dextrose, 50 to 75 per cent invert sugar, 20 to 40 per cent sodium salicylate, and 10 per cent quinine with urethane. The sodium chloride and dextrose mixture is the most universally useful, being prompt in action and nontoxic. The cramping and danger of necrosis are less than with sodium chloride alone. In practice, all solutions are kept on hand and that used which seems to suit best the individual case,—sodium chloride and dextrose for the general run of cases, glucose or invertose for the smaller or hair veins, sodium chloride or quinine and urethane for the diabetic, sodium salicylate or quinine and urethane for the more resistant veins. Note that this latter solution has the disadvantages of liability to cinchonism and anaphylactoid reactions. It should be used with caution and only after being assured by the patient that he knows from past experience that he can take quinine with impunity.

Position of the Patient: For the first treatment I prefer to have the patient sit on the end of the operating table with the legs resting on a stool. This prepares for syncope which occasionally occurs until the patient gets used to the injections, due more to the idea of a needle than anything else. Future injections are made in that position which renders the vein most readily and surely needled, either standing, sitting or prone. Many of the smaller varices cannot be safely injected save with the patient standing, while some of the larger veins require the recumbent position. In either position, the principle is to bring a concentrated solution into direct contact with a limited portion of intima; therefore, all injections are made into a segment isolated between two of the fingers or between two tourniquets. The technique of the injection is simple: the vein is entered with a short beveled 23 to 25 gage needle, the calculated amount of solution is injected, and held within the isolated segment for several minutes, the needle is withdrawn and pressure over the site of the puncture is maintained for 48 hours with a dental pad and adhesive. From time to time during the injection the plunger is slightly withdrawn to make sure by the flow of blood that the infiltration is still intravenous. The patient is requested to wear an elastic stocking or elastic bandage during and for three weeks after the treatments, the pressure hastening the organization and absorption of the thrombosed veins.

Complications: There are chiefly: perivenous infiltration with slough formation, acute inflammatory thrombosis, ascending thrombosis, persistent induration of the obliterated veins, and pruritus. With the proper precautions the slough should rarely occur. The acute pain and redness that develop after a slight false injection can usually be caused to subside without going on to necrosis if large warm compresses of magnesium sulphate or normal saline solution are begun early and kept up continually for 48 hours. Should a slough occur, it is very necessary to apply sterile dressings frequently until the process is well localized. Then the use of an organic digestant, such as enzymol, will help considerably in resolving the necrotic material and promoting healing. The acutely inflamed thrombus is greatly helped by light adhesive supports and a pressure pad higher up on the vein. Ascending thrombosis stops *per se* at the saphenofemoral junction or may be stopped before then by the application of a pressure pad several inches above the thrombus. Persistent induration is softened by mild applications of olive oil or mercurial ointment; pruritus is helped by tar salves or the X-ray. So much for the usual procedures in the injection method.

In order to further individualization in the

II

TYPE AND AMOUNT OF SOLUTIONS USED FOR INJECTING VARICOSE VEINS*

	Solution	Maximal Amount at One Injection, Cc.	Advantages	Disadvantages	Indications for Use
1	15-20% sodium chloride	10	Nontoxic; prompt action	Marked cramping; danger of necrosis	In large, thick veins; preferable in combination with dextrose
2	50% dextrose	20	Nontoxic; no slough; slight cramping	Not irritating enough for larger veins	For smaller, thin walled veins
3	30% sodium chloride and 50% dextrose, equal parts	10	Nontoxic; prompt action	Marked cramping; necrosis only if large amounts are injected beside the vein	Most universally useful; combines the advantages and reduces the disadvantages of solutions 1 and 2
4	50-75% invert sugar	10	Nontoxic; slight cramping	Too viscous; needs large needles; causes marked perivenous edema	May be used instead of dextrose
5	20-40% sodium salicylate	5	Prompt action	Very painful; danger of necrosis; salicylism	Generally useful with caution
6	10% quinine with urethane	2	Prompt action; rapid cure; painless	Cinchonism; anaphylactoid reactions; danger of necrosis; great deal of pain	Resistant varices; test for individual susceptibility

*Reprinted from the Pamphlet of the Varicose Vein Committee of the A. M. A.

Fig. 2.

treatment, each case has been studied as follows: routine history and physical, special history and special physical examination. Advanced cardiac, nephritic or cardio-vascular disease are contraindications to the treatment, lest the injection be blamed for a coincidental progression in illness. Diabetes calls for special injection solutions. Marked focal infection requires attention before vein treatments are begun lest metastatic phlebitis result. Pregnancy is a relative contraindication in that many varices disappear thereafter. The special history includes the following: symptoms attributed to the varicose veins, time of onset and possible cause of the varices, other extremity pains such as intermittent claudication, foot ache, paraesthesia, joint pains, whether an elastic stocking has been worn and if so with comfort, whether any of the veins have recently been inflamed, whether there has ever been "milk leg," and any known history of susceptibility of the patient to the drugs being considered. The special examination of the limb includes a description of the varicosities, their location and size, their relationship to the ankle and knee joint, and the tibial surface, the directness of their connection with the long saphenous and the relative dilatation of the long saphenous as it climbs the thigh. The soft parts are then examined for edema, the joints for arthritic changes, the feet for fallen arches. The examination is completed with certain tests of the venous and arterial circulation: 1. The *Trendelenburg test*, in which the limb is elevated till the veins are collapsed, pressure is made in the groin, the leg is lowered. If, when the pressure in the groin is released, the blood is observed to gush downwards, the long saphenous is truly varicosed and its valves incompetent; if, before the pressure in the thigh is released, the veins fill up shortly from below, the valves of the communicating veins are incompetent; 2. *Perthes' test* (modified), with the veins well dilated in the standing position, the blood-pressure cuff is applied about the thigh and the patient asked to walk about for a few minutes. If the varices diminish in size, the blood has been aspirated through the communicating veins into the deep veins and it is demonstrated that the deep veins are patent; 3. A somewhat similar test is to apply an *elastic bandage*

about the leg and have the patient *walk* continually for 30 minutes. If the deep veins are occluded, painful symptoms in the limb result from the total obstruction of venous return; 4. *Palpation of the dorsalis pedis* and tibialis anticus for pulsation. Other tests of the arterial circulation occasionally required are described later.

Fig. 3.—Method of aspirating and injecting larger varices.

In a given series of cases in the injection method, very few patients present identical pictures. I shall endeavor to describe some of the variations as seen in my own practice and to give the treatment accorded the atypical problems. Apology is made for the subgrouping, for it is realized that what has seemed atypical to me may be typical to another worker in this field.

The Exceptionally Large Varix: I refer to a saccular varicosity, one to several centimeters in diameter. Such veins will frequently withstand repeated injections made in the ordinary way. The horizontal position then becomes the method of necessity. Using a somewhat larger gage needle and a 20 c.c. syringe, the vein is entered between two tourniquets and the isolated segment aspirated almost free of blood. The syringe is then detached and a second syringe containing the sclerosing solution is connected in its place, extreme care being taken not to move the needle during this manoeuver. As a further precaution, a few drops of blood are again withdrawn into the syringe and the sclerosing solution slowly injected. It may happen in spite of this technic that glucose and sodium chloride fail to obliterate one of the large veins, in which case quinine and urethane, or strong sodium salicylate solution is used. There are several especially constructed two-way petcocks on the market, intended to facilitate aspiration and

Fig. 4.—After and before treatment. Large vein at knee joint level.

injection of the vein without going through the syringe exchanging manoeuver, but in my own experience they are anything but satisfactory.

Great Dilatation of the Long Saphenous at the Knee Joint Level: Early experience taught that injections at this level were frequently followed by a rather severe inflammatory reaction, the obliteration of an unexpectedly long segment of vein and occasionally by a progressively ascending thrombus. During the first day or so of the acute reaction, pain would be so extreme as to force the patient to bed and, as the inflammation subsided, the vein became a contracted tender cord, which for a week or so limited the motion of the knee.

Case 1. Mr. M.: Varicose veins of the right leg for 12 years, with recurring ulcer cruris. The long saphenous was moderately dilated from the sapheno-femoral junction to a few inches below the knee, with many smaller varicosed branches in the lower leg. One large branch led directly to the ulcer and the first injection was made into this with complete local obliteration and appreciable benefit to the ulcer. Three days later, with the patient in the standing position, the long saphenous was injected below the knee between the spread fingers, about 1 c.c. of quinine and urethane being used. Within twenty-four hours there was marked inflammation over the injected segment, with evident thrombosis of the vein.

The patient was forced to bed for a week, during which time the inflammation subsided, but the thrombus gradually ascended to the mid-thigh. The patient became ambulant again at that time and this apparently stopped the upward spread of the clot. Ten days later he presented himself at the office with pain in the groin and examination revealed complete thrombosis of the sapheno-femoral junction. There was no temperature, no edema, and the leg ulcer was healed. The patient was allowed to continue up and in a few days all pain was gone. He has remained well.

Two other cases in my series reacted to injection of large dilatation of the saphenous at the knee level with acute inflammation, painful, contracted cord, and ascending thrombus. In these the pain in the inflammatory area was markedly alleviated by adhesive supporting, and the upward spread of the thrombus was effectively stopped by the application of a pressure pad in the thigh. These patients were encouraged to remain ambulant, which may also have been a factor in stopping the thrombus. The tendency of these varicosities to severe reaction is probably due to the added injury of joint motion. The three experiences noted above led me to adopt the following plan for such varices: Inject segments well below and above the knee joint, using relatively small amount of solution in doing so. At a later sitting inject the narrowed vein between the obliterated segments.

I might add here that many writers, and particularly McPheeters, do not fear progressive ascent of the thrombus, feeling that this never goes beyond the sapheno-femoral junction, and that complete obliteration of the vein to this point is desirable. Though this is undoubtedly true, I feel safer in stopping by pad pressure an unusually rapidly climbing thrombosis. Of the seven deaths attributed to the injection method by McPheeters, one reported by Lambott was due to deep femoral thrombosis, twelve days after the long saphenous had become thrombosed at the fossa ovale.

Varicose Veins over Bony Prominences: I refer to varicosities over the anterior surface of the tibia or over the patella or ankle bones, where there are but scant soft parts between the veins and the bone. The thrombosed vein in these sites is apt to be very superficial and quite painful. It is therefore advisable to adopt the procedure previously described; inject the part of the varix to either side of the bony prominence and then get the center segment with a small amount of solution. Should a chronically indurated area ever occur, the gentle application of 33 per cent mercury ointment, or of olive oil is of benefit.

Marked Varicosities of the Long Saphenous High in the Thigh: Most authors agree that it is safe to inject as high as the mid-thigh, but opinion is divided with regard to varicosities above this level. McPheeters states that they are no exception to the injection method and he does not hesitate to treat them, while De Takats advocates ligation of the long saphenous just below the sapheno-femoral junction and subsequent injection of the varices that remain. De Takats makes this ligation

Fig. 5.—Right. Ulcer showing feeder vein.
Left. Leg ulcer of long duration fed by blood sinuses in indurated tissues required Kondoleon operation and skin graft.

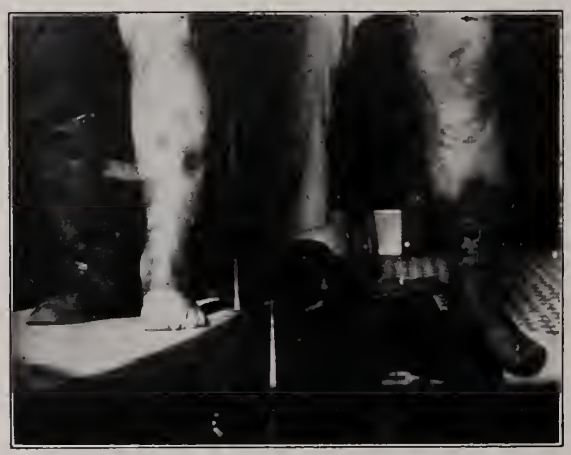

Fig. 6.—After and before treatment. Long saphenous was tied off in thigh and injected.

a simple ambulatory procedure, cutting down on the vein under local anesthesia and allowing the patient to go home the same day. Personally, I have tried to divide the cases into two groups: those presenting many short isolated and saccular varices, and those in which the long saphenous is a more or less straight dilated tube, the greater dilatation being upward. The small varicose segments of the first group are readily and safely injected between tourniquets with small amounts of solution. For the second group, preliminary ligation is the method of choice for three reasons; first, to avoid the possibility of ascending thrombosis; second, to shorten greatly the period of subsequent treatments, and third, to lessen the possibility of recurrence to which this class of cases is predisposed because of recanalization by the enormous downward venous pressure. To date I have found it advisable to perform ligation and division of the long saphenous in the thigh, using the ambulatory method of De Takats in two cases.

Case 2: Recurrent varicose veins following a radical operation eleven years previously. In addition to many large varicosities in the calf and to two large ulcers on the anterior aspect of the leg, there was marked cylindrical dilatation of the large saphenous from the lower thigh upward. Just below the fossa ovale this formed an enormous saccular dilatation the size of a baseball. The vein was ligated and divided under local anesthesia just above the sacculation and the patient allowed to go home from the hospital the same day. Five subsequent injections completed the cure.

Case 3: Both legs almost completely covered with large sinuous and serpentine varicosities, the only difference being that, in the left leg, the long saphenous was markedly dilated from the knee upward, the greatest dilatation being above. The Trendelenburg test was markedly positive in this leg, the downward venous pressure being enormous. Twenty-two injections were required for the right leg. Ambulatory ligation was done on the left leg and eight injections sufficed to obliterate any remaining varices.

Phlebectasias: These enormous cavernous masses consist of a network of intercommunicating dilated veins, structurally resembling angiomata. As they are with difficulty emptied, they are not ideal for the injection method, it being hard to get the sclerosing solution into them in needed concentration. However, their very size makes patients and physicians afraid to attack them surgically, and as illustrated in the following case, good results can at times be obtained by treating them by the injection of strong sclerosing solutions.

Case 4: Thirty-one years of age. Three large phlebectatic masses were present on the posterior aspect of the left leg, two below the knee and one above. They had first been noticed by the patient when 14 years of age and have been growing larger ever since. The masses were painful in themselves in the standing position and the whole limb ached if the patient did much work. The first injections readily shrank the smaller lower mass, but injections into the large upper ones were of no avail. Close examination revealed that a greatly dilated venous trunk fed the uppermost mass from above, and that a similar large vein communicated the upper and middle mass and a smaller vein the middle and lower. Treatments were then directed to these feeder veins, the injections being made between tourniquets after partial aspiration of the contained blood. I say "partial" aspiration because there seemed to be no end to the amount of blood that could be obtained from these trunks, the impression being gained that these were direct branches of the deep venous system. Several injections with large doses (2 c.c.) of quinine and urethane have finally turned these veins into hard thrombosed cords and the phlebectatic masses are rapidly shrinking. It is possible that this case could have been more quickly cured by first tying off the feeding veins, but this would have been a formidable task as they were remarkably large and under unusual pressure.

Varicosities and the Chronically Edematous Leg: In many cases the legs are so swollen that the veins are not visible or palpable. If such patients are asked to wear an elastic stocking or bandage for a few days, the swelling is often reduced and the veins can be located. However, in the occasional case, there is a chronic edema and induration which is not reduced by this method. Careful palpation of such limbs will reveal soft resilient, semi-fluctuating areas, which are the varicosities, or venous sinuses, deeply situated because of the abnormal cutaneous edema. Note that this palpatory sign is the reverse of that usually obtained over varicosed veins; usually

the distended varicosities are firm and projecting from the adjacent soft parts. In the cases under discussion, the long standing edema has caused a massive induration which feels hard, in contrast to the blood filled varicosities. The needle frequently has to be thrust several centimeters deep to reach these sinuses and especial care must be made by repeated withdrawals of the piston of the syringe not to inject perivenously, for the veins being deeply situated and already in poorly nourished tissue, a false injection will result in a large slough. My one slough in over 700 injections was in a case of this sort. After all of the varicose sinuses are obliterated, the persistent edema is treated by a program of massage, baking and elevation, with marked benefit in the majority of cases.

Varicose Veins in the Obese: The obese patient is apt to have varicosities that are relatively small, deep and hard to locate. Such patients are likewise frequently victims of flat feet and arthritis of the ankle or knee. For these reasons the differential diagnosis of vague pains in this group at times becomes most difficult.

Case 5: First seen complaining of acute shooting pain from hip to ankle, somewhat along the postero-lateral aspect of leg. Pain relieved partially when in the recumbent position. No definite tender spots along course of sciatic nerve. History of swelling of feet and ankles during the past few months, since taking a position requiring continual work while standing. Treated with salicylates and applications of heat for atypical sciatica, for several months, with temporary relief. Swelling of legs became more definite and elastic stockings ordered. Definite varicosed condition of long saphenous of both legs discovered several weeks later, after the patient was required to stand quietly for fifteen minutes. With obliteration of the varicosed veins, swelling of legs ceased and limbs became pain free. Subsequently the patient has been caused to lose weight by dieting and endocrine therapy.

Note that the presence of varicose veins and their causal relationship was only discovered in this case after the use of elastic stockings and after prolonged standing. The relationship of varicose veins to painful joints is a similarly difficult problem. Very often the patient has several stiff and crepitating joints, but it is the joint that presents a few varices which is the most painful. Obliteration of these veins, particularly in the case of the knee, almost always diminishes the pain. Veins about the foot and ankle are usually best left alone. but, if because of arthritic pains about the ankle joint, it is decided to inject these varicosities, an especially fine needle should be used as the skin in this area is very tender, and a cut-away shoe should be worn for a while. Another characteristic of the obese group is the presence of fatty pads over the front or side of the ankle. I know of no satisfactory method of removing same. Flat feet could well be discussed here too, but I have nothing to say other than that they should be looked for and treated when present in every case of varicosed veins.

Hair veins, spider web dilatations, superficial thrombi, partially obliterated varices: Often after the large varicosities are removed, the patient will complain for cosmetic reasons of the tiny hair veins. These can usually be removed by simple needling and the application of a pressure pad. Occasionally it may be necessary to inject a few minims of a mildly irritating solution, such as 50 per cent dextrose, in which case slight unavoidable perivenous infiltration does no harm and obliterates the vein. The spider-web dilations respond unsatisfactorily to the injection method, there being as a rule not central, or key vein to inject. They are best left alone. When a small, exceptionally superficial vein becomes thrombosed and remains as an ugly raised, clotted vein, I have obliterated the segment to either side of it, waited several months for the process to get quiet and then nicked the skin with a sterile needle and let out the clot. If the thrombus is not readily removable, an organic digestant, such as enzymol or caroid, is applied on the dressing until it is dissolved. Occasionally an injected vein will seem to be only partially obliterated in that it forms an unresolving boggy lump. All that is necessary in this event is to insert a large gage needle into the center of the old blood clot and aspirate. A marked hastening of the sclerosing process will result.

Varices of the vulva and lower abdomen: Varices of the vulva are commonly due to the same causes that produce varicosities of the long saphenous. Thus pregnancy is a com-

mon cause. Theoretically it should be perfectly safe to inject such veins so long as there is no history of deep femoral thrombosis and many workers regularly do so. I personally have had no such cases, but in light of present knowledge believe their treatment would be safe. On the other hand, varices of the abdominal wall are usually compensatory to iliac thrombosis or hepatic disease and had best be left alone.

Varices following injury or operative trauma: A blow to the leg or an incisional injury, as in operations for osteomyelitis, may be followed by varicose veins. It is my impression that such venous dilatations are due to injury or infection of the vein wall or the supporting tissues, rather than to compensatory dilatation due to deep venous system obstruction. The frequent recurrence of varicose veins after operative removal is probably explained on a similar basis of injury to unseen adjacent and often parallel veins. When varicosities have been present for a long time over a bony surface, the nutritional disturbance and infection produce a periositis which may be difficult to differentiate from osteomyelitis; or if osteomyelitis has been present, may make the proper interpretation of the bony thickening most confusing.

Case 6: An injury to the left leg during the World War resulted in an extensive osteomyelitis of the left leg. Following three operations, the process became quiescent until 1927 when there was acute localized redness, edema and pain over the tibia, which was interpreted as acute periostitis and which subsided without operative intervention. Many varicose veins which lined the old scar became much larger after this attack. In 1930 the leg was more or less continuously painful and an X-ray taken in June at the Public Health Hospital showed marked periosteal thickening but no evidence of active osteomyelitis. It was thought that the periosteal thickening and the pain in the leg were due to the varicosities and the same were readily obliterated. However, the pain persisted and a second X-ray showed an area of softening in the lower end of the tibia. Three days later the soft parts over this area broken down, revealing a discharging bone sinus.

Varicose Veins and Vascular Disease of the Extremities: It must be remembered in the differential diagnosis of varicose vein cases, especially those presenting themselves for leg pain, that the symptoms may be due to other causes than varicose veins. Thrombo-angiitis obliterans, arteriosclerosis, Raynaud's disease must be ruled out. In the examination for these affections one notes intermittent claudication, color changes in the elevated or dependent position, or following exposure to the cold, pulsation in the dorsalis pedis or posterior tibial arteries. Special tests of value are the angle of circulatory efficiency of Buerger, the histamine reaction of Star, and colorimeter determinations of surface temperatures in the extremity. Star is pursuing his work on a large series of cases at the University of Pennsylvania Hospital and has demonstrated conclusively that the reaction to the skin following stab punctures through histamine can be taken as direct evidence of the vascular condition of the part. If there is any question with regard to the arterial circulation, the varicose veins should not be injected, lest a coincident or subsequent gangrene be attributed to the vein therapy. De Takats describes the following case: "W. S., a man, age 60, had had intermittent claudication for more than a year. After a slight trauma of the right shin, an ulcer had developed, gangrenous in character and progressive. He had a few dilated veins at the inner surface of the calf. Several physicians had seen him and diagnosed the condition as varicose ulcer. When seen, the patient had no pulse in the popliteal, posterior tibial or dorsalis pedis arteries. At amputation above the knee, an occluding thrombus was found in the popliteal artery. Old vessels showed thick atheromatous changes."

Erythema nodosum and erythema indurata are classed as skin rather than circulatory diseases, the former being probably rheumatic in nature and the latter a tuberculid. I have had two patients present themselves for vein treatment because of pain in the leg when the real cause was the unnoticed deep-seated painful nodules of erythema nodosum. A case of erythema indurata has been treated for years as a pre-ulcerous condition related to small varicose veins.

The Varicose Ulcer: The association of leg ulcer and varicose veins is familar to us all. The ulcer has usually developed following a

slight injury to tissue poorly nourished by stagnant venous blood. In the differential diagnosis, vascular disease, syphilis, tuberculosis or malignancy must be considered, but it must be remembered that syphilis or tuberculosis may be present in a patient having a true varicose ulcer.

Case 7: An ulcer over anterior surface of tibia for one year, the condition being attributed to luetic infection as evidenced by a positive Wassermann. Failure of response was said to be due to failure of the patient to take "shots" regularly. When examined, a definite "feeder" varicosity was noted as shown in one of the lantern slides. Three weeks after injection of this vein the ulcer was healed.

When such key veins are present, one can invariably predict that the ulcer will rapidly heal upon their obliteration by injection. In contrast to this type is the leg ulcer of long standing in a chronically edematous and indurated leg. The ulcer is large and unhealthy, the surrounding skin is thickened and scaly. No veins are visible or readily palpable. The elastic stocking helps but little in reducing the swelling, the edema here is due to lymphatic block, the previous infection having obstructed the accompanying lymphatics. In the examination of this type, I wish to call attention again to a point previously mentioned. Careful palpation of the tissues adjacent to the ulcer will usually elicit definite semi-fluctuating softened areas, like soft channels running through the indurated skin. The conditions are opposite to those usually found. No true vein exists, the intima having been destroyed by infection, and the softened areas are deep blood sinuses, which require that the needle be inserted fairly deep to reach them. However, their obliteration helps considerably in healing the ulcer.

As to the local treatment of the ulcer cruris, for the smaller ulcers with definite feeder veins, very little is necessary. Silver nitrate or balsam of Peru may be used to stimulate granulations, adhesive strips may be used to support and guide the new epithelium. For the larger ulcers, the pressure sponge method of McPheeters is probably the best. The ulcer base is stimulated with Dakin's solution, a silver nitrate paste or balsam of Peru (the Tulle Gras of E. Fougeras is excellent here), fluff gauze is applied and over this is placed a soft rubber sponge. The dressing is supported by an elastic stocking or bandage until the ulcer is healed, when it may be protected for several more weeks by an Unna's paste boot.

In some few cases, even after all of the blood sinuses are obliterated, the ulcer will fail to heal. In such cases it is advisable to excise the ulcer and apply a whole thickness or Davis pinch graft. If edema persists, it is to be remembered that it is lymphatic rather than circulatory and that by persistent use of proper methods, new lymphatics can be made to form. These methods consist of continued use of elastic stocking or paste boot support, of daily gentle massages of the limb, of daily use of the baking apparatus, and the elevation of the leg in bed at night and as often as possible during the day. It is remarkable what benefit can be obtained in these chronically edematous legs by such procedures. In cases of very long duration, a Kondoleon fascial stripping operation may be done, and the ulcer excised and grafted as described by Trout. Dr. Trout, in a recent personal communication, informs me that he has given up his tube grafting for the simpler Davis graft.

Before closing, I wish to say a few words about ulcer cruris and past history of milk leg. The injection method is not contraindicated *per se* because of the previous milk leg. Treatment will depend on whether the deep veins are functioning or not. If a tight elastic stocking has been worn with comfort, and Trendelenburg's and Perthes' tests are positive, we are perfectly safe in injecting these veins.

Medical Arts Building.

Discussion

Dr. R. Duval Jones, Jr., Norfolk. Since it is so very late, I shall not attempt to discuss at length Dr. Lowenberg's splendid and comprehensive paper. There are, however, a few salient points which I consider worthy of emphasis: First, the matter of determining the patency of the deep veins; second, phlebitis as a contradiction, and, third, the prevention of the escape of sclerosing fluids into the tissues.

When the superficial veins are dilated in order to compensate for obliteration of the deep veins, the injection treatment is obviously contra-indicated. Dr. Lowenberg has mentioned the various ways of determining the patency of the deep veins, and of these I have found the simple test of having the patient wear an elastic stocking or snug bandage for a day or so quite satisfactory. If the patient reports relief, the surgeon is justified in assuming that the deep veins are adequate to take care of the circulation. On the other hand, when the bandage or stocking causes distress, the probabilities are that the deep veins are obliterated.

It is interesting to note that, of all the cases re-

ported in the literature, only seven have died from embolism, and of these, four were known to have recently suffered with phlebitis. Thus it would seem that the injection treatment of varicose veins is contra-indicated whenever there has been any recent evidence of phlebitis.

As regards the escape of sclerosing fluid into the tissues, one cannot be too careful. Unfortunately there is no fluid which will cause sclerosis of the vessels which will not at the same time cause a slough when a sufficient quantity escapes into the surrounding tissues. We are told that the first sign of escaping fluid is a stinging, burning pain in the region of the injection. However, this type of pain does not necessarily mean that there has been an escape of fluid. In many instances where the walls of the veins are thin the patient will complain of the same pain. For this reason it is wise to withdraw a few drops of blood before continuing the injection. When one attempt has been made to inject a vein and the needle has slipped out or you have failed for other reasons, it is unwise to attempt another injection in the vicinity of the first puncture. This is particularly true when a thin fluid, such as quinine and urethane, is being used, because of the fact that the fluid may escape through the original puncture in sufficient quantity to cause a slough.

Dr. H. C. Jones, Petersburg: I have injected a few of these veins, and right now I have a very definite problem of slough. I have seen a number of these veins injected at the Mayo Clinic by Dr. Dixon and I followed the technic that he used All three of these sloughs occurred about three weeks after the injection. Quinine urethane was used. No pain was caused at the time of the injection; in fact, the patient noticed no discomfort for about three weeks afterward. All came out of the same box of ampoules. I noticed on palpating these veins that no definite clot was formed. All began to ulcerate at about the same time. As I opened them I could press out an unorganized clot. I was impressed that Dr. Dixon, at the Mayo clinic, used no tourniquet. (Dr. R. Duval Jones: He does not use a tourniquet). I believe these sloughs developed from the fact that the blood was not drained out. Dr. Lowenberg spoke just now of not being able to draw all the blood out of large veins. I believe between two tourniquets it might be done.

I would like to know how to heal these ulcers; that is the problem that is confronting me now. It has been going on for about five weeks and is the most embarrassing thing I have ever had in my life. The patients, of course, are ambulatory, but their condition is very embarrassing.

Dr. Lowenberg, closing the discussion: I have had one slough, too, though this was the only one in a large number of cases. The patient was not intelligent; I injected her veins, put on a pressure pad and told her to take it off the next morning. She came in about ten days later and still had it on, and the skin was irritated from it. I injected another deeply situated vein with quinine and urethane and one month later learned that she had been laid up with a slough. This particular patient had a luetic infection. It is my routine to take a Wasserman, etc., but in this case it was by error omitted.

When I get a soft partly thrombosed vein, as Dr. Jones described, I stick a needle into it and aspirate it. That is in the paper, but I skipped it. I draw out the unclotted blood. Now, as to healing it, there does not seem to be much to do. When we get a slough, the whole question of healing it is to get rid of the necrotic material. I use a preparation called enzymol, which is applied until a healthy base appears, then I use balsam of Peru in castor oil daily until it heals up. It may take a good long time, unless you can get your patient off his feet.

THE DIAGNOSIS OF PERICARDIAL EFFUSIONS.*

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Pericardial effusions are very frequently misdiagnosed or diagnosed late when they should be diagnosed fairly early. Perhaps the main reason for this is that the condition is not particularly common and is not always thought of. Nevertheless, if one examines the patient carefully enough and often enough during the course of the illness, an ordinary pericardial effusion should not be missed. The object of this paper is to bring out certain features in the diagnosis.

At the outset we must distinguish, of course, exudates from transudates. In the case of the exudate there is usually evidence of infection, with fever, leucocytosis and a general toxic condition. With the infection there is often a train of symptoms which directs attention to the heart; either pain, of any degree of severity, or merely a dull, heavy feeling of discomfort in the region of the heart; dyspnea is usually present, the pulse rate is high and irregularity is common. The usual description of the physical signs as given in the text-books is about as follows: At the onset there may be a pericardial friction rub noted, but as time goes on the accumulation of the fluid usually separates the layers of the pericardium and prevents the friction. If pain has been present it usually disappears when this occurs and gives place to a dull sense of oppression or suffocation. The friction rub at times persists at the base, especially when the patient sits erect. The apex impulse becomes weaker and eventually may be impalpable. At the same time the heart sounds become progressively fainter and muffled in character. When the effusion becomes large, and especially when it develops rather rapidly, there are almost always alterations of the normal signs in the portion of lung posterior to the heart. The breath sounds assume a bronchial quality and the spoken and whispered voice sounds become

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greatly intensified. With these changes there is frequently diminished resonance in the same area. These symptoms and signs, together with others of minor importance and the fluoroscopic or roentgenographic findings, should give little cause for inability to diagnose.

In certain instances, however, and these are not rare, the signs are atypical if the above description is considered to be that of the usual physical syndrome. Also, in an occasional case a fibrinous pericarditis may be associated with an adjacent pneumonitis, giving a picture which superficially may be readily confused with pericarditis with effusion.

Apparently contrary to common belief, most of the fluid in a pericardial effusion is lateral and posterior to the heart. The latter may be thrust forward against the chest wall and to a certain extent be flattened out there. In this way the heart sounds become much intensified rather than much diminished, and the cardiac impulse more diffuse and very prominent. At the same time a pericardial friction rub is usually audible in the second and third interspaces to the left of the sternum or even over most of the precordium. The area of cardiac dulness anteriorly may be moderately increased, but the examiner may attribute this to dilatation and consider the case one of fibrinous pericarditis. Posteriorly, however, he finds an area suggestive of pneumonitis, usually below the angle of the scapula, covering a variable extent and possibly even extending into the axillary region. This is not due to compression atelectasis as is commonly taught but to the fact that the main bronchus of the lower lobe of the left lung is pressed against the vertebral column by the distended pericardial sac, and the breath sounds therefore are transmitted to the chest wall directly from the bronchus (Conner). The dulness is due to the thinness of the pulmonary tissue between the chest wall and the distended pericardium and to a less extent to compression atelectasis. If the examiner fluoroscopes the chest he will probably find what appears to be in the anteroposterior view merely a dilated heart; in the oblique view he may or may not be able to see the bulging of the pericardial sac posteriorly. His X-ray films will show no evidence of pneumonitis and he may conclude that the shadow cast by the supposedly merely dilated heart is obscuring a patch of pneumonitis posterior to the heart. From a practical point of view it might make little difference whether he diagnosed the situation correctly or not, but from the standpoint of scientific medicine it makes a great deal of difference. In the first place, such a combination of signs should always lead to the question as to whether there is fluid in the pericardial sac with altered pulmonary signs posteriorly, or a fibrinous pericarditis with an adjacent pneumonitis. We feel that the chances are always in favor of the former condition. In the second place, dyspnea and cardiac embarrassment may become rather extreme, and if the condition is properly diagnosed and the judicious aspiration of the fluid performed, the situation may be greatly relieved.

When one suspects that there is a pericardial effusion he will probably be able to determine the existence of this condition by frequent percussion of the cardiac area and the study of serial roentgenograms. Usually the fluid will continue to accumulate and the cardiac area will assume the usual shape produced by a pericardial effusion, even though the signs as described anteriorly persist. In the case of a localized pneumonitis associated with a fibrinous pericarditis the cardiac outline will not change appreciably unless fluid does later accumulate, and roentgenographic evidence of an extending pneumonitis may develop. In this condition the course of the disease is greatly prolonged and the pneumonitis is very gradually resolved. As a rule, the fibrinous pericarditis which is associated with the pneumonitis is of the idiopathic type, that is, it is difficult to account for the origin of the pericarditis. In the case of a pericardial effusion with posterior pulmonary signs usually there is evidence of a rheumatic infection and preexisting endocarditis, or some other fairly easily determined infecting agent, such as the pneumococcus or tubercle bacillus.

The problems involved in the diagnosis of cases of these types are indicated in the following case reports:

Case 1.—The patient, a colored girl aged 13 years, was admitted to Georgetown University Hospital on September 10, 1929. Since the age of four she had had four attacks of rheumatic fever. Following the first attack she had attacks of dyspnea with edema of the lower extremities, especially when she would be more active.

Two weeks before admission she began to

have pain and swelling in both knees and the right shoulder. She did not improve and when brought to the hospital was complaining of pain beneath the sternum.

Physical examination on the day of admission showed severe chronic tonsillitis, a pericardial friction rub over the entire precordium, dulness with tubular breathing and bronchophony over the left lung posterior to the heart. There was no evidence of pleural effusion. The heart and respiratory rates were very rapid. There was a localized mid-diastolic murmur near the apex with a systolic murmur at the apex. The first sound was snappy and no thrills were noted. The apex impulse was diffuse but was felt and heard with more than normal intensity. The area of cardiac dulness was very large, the heart practically filling the entire left chest, but the cardiohepatic angle was acute.

The urine showed a few red blood cells, but was otherwise normal. The hemoglobin was 60 per cent by the Dare method. The erythrocytes numbered 3,400,000 per cu. mm., and the leucocytes numbered 14,350 per cu. mm. of blood, of which 93 per cent were neutrophiles. The temperature was 102.4° F. and the pulse was 120 beats per minute. The blood Wassermann and Kahn tests were negative. The fluoroscopy and the roentgenogram revealed no certain evidence of pericardial effusion (Figure 1a).

The diagnosis was made of recurrent rheumatic fever and mitral endocarditis; mitral stenosis and regurgitation: acute and possibly chronic pericarditis. There were two possibilities to account for the lung signs: 1. Pneumonitis due to extension from the pericardium. 2. Pulmonary signs due to fluid in the pericardial sac.

In accordance with our belief that chronically infected tonsils should be removed as early as possible in rheumatic infections, tonsillectomy was performed promptly.

On September 17th, it was noted that the area of cardiac dulness was increasing upward and to the left. The area of signs of lung compression was increasing downward and there was also noted retraction on inspiration of the intercostal spaces laterally and posteriorly, on the left side. The apex beat was still diffuse, palpable and audible with undiminished intensity; the area of pericardial friction rub, however, had diminished somewhat in extent (Figure 1b).

On September 19th, the dyspnea had become so marked and the pulse rate so rapid with the greater accumulation of fluid that it was thought advisable to aspirate. This was done through the seventh interspace in the posterior axillary line and 400 c.c. of straw-colored fluid tinged with blood was withdrawn. Physical examination immediately afterward revealed almost complete disappearance of the pulmonary signs. About a week later signs of increasing fluid were noted, with an increase in the pulmonary signs posterior to the heart; the pericardial friction rub had dis-

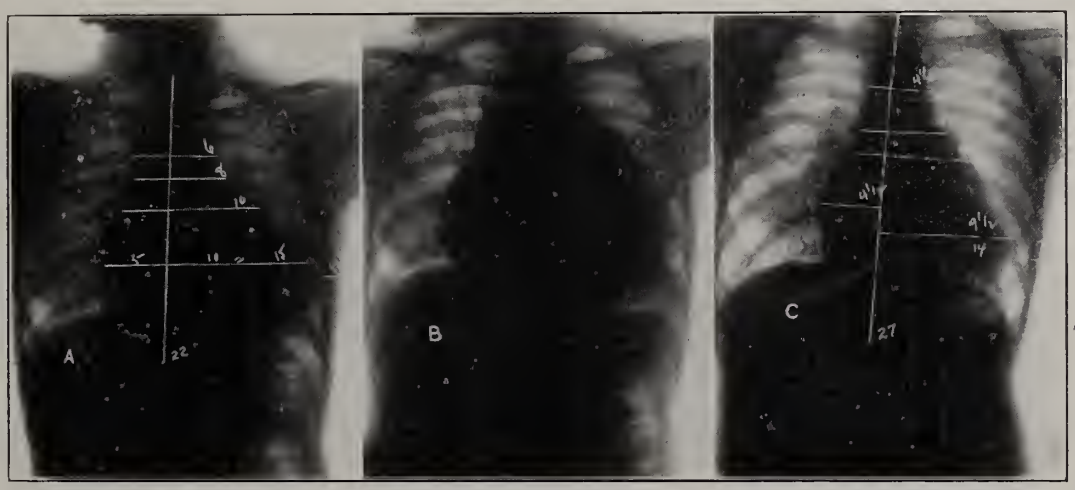

Fig. 1a.—Case 1. Roentgenogram of chest upon admission. No certain evidence of pericardial effusion.
b.—Case 1. Roentgenogram of chest seven days after that of Figure 1a, showing undoubted evidence of pericardial effusion.
c.—Case 1. Roentgenogram of chest three weeks after that of Figure 1b. Fluid entirely absorbed. Comparison with Figure 1a suggests that fluid must have been present then.

appeared. Aspiration was attempted exactly as before, but owing to the rapid coagulation of the fluid only 50 c.c. was removed, and it was thought that absorption of the fluid would take place rapidly from this time.

The patient improved slowly but steadily after this. The temperature was remittent in character, the highest for the first few days being 102.4° F. It gradually subsided so that at the beginning of the third week it was normal. The pulse rate varied from 100 to 120 during the febrile period of the disease and for some time afterward.

Except for a slight exacerbation of her joint pains on October 27, her convalescence was uneventful and she was discharged on December 1, 1929, about eleven weeks after admission, with no evidence of pericarditis and no abnormal lung signs (Figure 1c).

She was seen at her home on February 25, 1930, and was found to be in very good health, having gained weight and strength. Her temperature was 98.4° F. and her pulse rate was 90.

Comment. In this case there was little doubt as to the presence of pericardial effusion when the cardiac outline was daily noted to be extending. The interesting feature was that in spite of this apparently large effusion the heart sounds anteriorly became more intense, the apex impulse more prominent and the pericardial friction rub more persistent. Signs of embarrassment of cardiac action progressively increased so that it was considered imperative to aspirate for the relief of pressure. Ordinarily, with pericardial effusion of rheumatic origin it is unnecessary to aspirate. We were impressed by the interesting observation that there was a suggestion of the coronary form of T-wave in the electrocardiogram. Our attention was called to the work of Scott, Feil and Katz, who showed that the coronary form of T-wave could be produced by compression of the heart by a pericardial fluid accumulation. Unfortunately this electrocardiogram was taken a few days after the aspiration of fluid, and the importance of our electrocardiographic finding is diminished by our inability to observe the form of the T-wave throughout the changing conditions of the intrapericardial pressure.

Case 2. The patient, a colored boy aged 16 years, was admitted to Georgetown University Hospital on December 9, 1929. On November 29, 1929, with no premonitory symptoms, his ankles became slightly painful and then became somewhat swollen; a few days later he developed pain over the precordium and severe dyspnea, which gradually became worse. He had had a typical attack of rheumatic fever the year previous, which had confined him to bed for seven months. For two years before he had had vague pains in his limbs, which, he was told, were growing pains. The remainder of the history was irrelevant.

On admission he was orthopneic but not complaining of much pain. There was no edema anywhere. The apex beat was in the 5th interspace just outside the nipple line. The area of cardiac dulness was greatly increased to the right, left and downward. Systolic and diastolic murmurs were heard over the entire precordium and a to-and-fro pericardial friction rub over the upper half of the precordium. At the apex a gallop rhythm was noted with systolic and diastolic thrills. Posteriorly, there was dulness on the left side extending from the base to just above the angle of the scapula, with bronchial breathing and bronchophony. The liver was not palpable. Fluoroscopy showed a moderately enlarged heart with normal pulsations. The temperature was 100.8° F. and the pulse 102. The urine was normal. The hemoglobin was 63 per cent by the Dare method. The erythrocytes numbered 3,400,000 per cu. mm., and the leukocytes numbered 18,400 per cu. mm. of blood, of which 88 per cent were polymorphonuclear neutrophiles. The blood Wassermann and Kahn tests were negative.

After a week with no changes in the physical signs, it was determined to aspirate the pericardial sac because of a probable fluid accumulation. Paracentesis was done posteriorly through the 6th and 7th interspaces, but no fluid was encountered (Figure 2a).

The patient was examined day by day and it was noted twenty days after admission that the area of cardiac dulness was slightly less. From this time on the cardiac measurments gradually decreased and the area of dulness in the lung posteriorly gradually cleared up. This change was verified by roentgenograms (Figure 2b). The pericardial friction rub disappeared and his symptoms improved greatly. During all this time he had a low grade fever, the temperature reaching 100° F.

He was discharged on January 31, 1930, with moderate cardiac enlargement; the lungs were absolutely clear. He was still running a low grade fever and his pulse rate was 110.

He was seen again on March 10, 1930. He was able to get about fairly well and was very much stronger. The physical findings were the same as on dismissal. His temperature was normal and his pulse rate was 100. There was no friction sound, but the murmurs were still present.

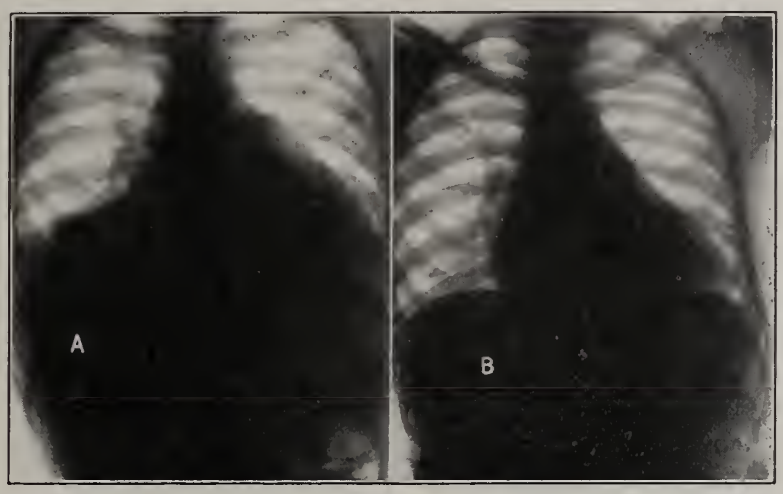

Fig. 2a.—Case 2. Roentgenogram of chest. Questionable effusion.
b.—Case 2. Roentgenogram of chest five weeks after that of Figure 2a, showing diminution in size of cardiac area.

Comment. In this case, while we were unable to obtain fluid on aspiration, we feel certain that there was considerable fluid posterior to the heart in the pericardial sac. The signs indicating this were practically identical to those present in the first case, and as the patient gradually improved these signs gradually subsided and eventually disappeared. The cardiac and respiratory embarrassment were not as severe as in Case 1; and the roentgenographic evidence of pericardial effusion was not striking. The diminution in the size of the heart shadow with the disappearance of the signs of pulmonary compression are sufficient evidence, however, to warrant the diagnosis. We do not believe that the change in the cardiac shadow was due to a regression of a dilatation, because the decrease in the area was more basal than one should expect with a dilated heart, and because it is unlikely that any heart could dilate to such an extent as to produce the pulmonary signs present. In this regard we can say that we have never seen these pulmonary signs in a case of frank dilatation of the heart, nor in any case of hypertrophy of the heart, no matter how great the hypertrophy.

Case 3. The patient, an unmarried woman, aged 29 years, was admitted to the hospital complaining of precordial pain. She had suddenly developed a headache with stiffness and soreness of the neck muscles after sitting in a "refrigerated" moving picture theatre, and the next morning complained of severe pain over the heart. Her past history was completely negative. Physical examination was negative except for a to-and-fro pericardial friction rub over the entire precordium, most marked at the apex. The temperature was 101° F., the pulse rate 106. The heart sounds were normal and the cardiac dulness not increased. The hemoglobin was 60 per cent by the Dare method, the erythrocytes numbered 3,140,000 per cu. mm., and the blood smear showed moderate achromia with mild poikilocytosis and anisocytosis; the leucocytes numbered 5,800 per cu. mm. with 56 per cent polymorphonuclear neutrophiles. Urinalysis showed a trace of albumin and a few white blood cells. Repeated blood cultures throughout the course of the illness were sterile. For eleven weeks the temperature ranged from 98° to 104° F., often of an irregularly septic type and with peculiar exacerbations and partial remissions. The pulse ranged from 100 to 130 beats per minute. The blood pressure remained around 115 mg. Hg. systolic and 70 diastolic. A moderate

anemia was present and the leucocytes ranged for several weeks between 5,000 and 6,000 with a normal differential count. The spleen was never palpable nor were petechiae ever seen. Endocardial murmurs were never heard. At first there were a few rales audible at the left lung base. Later a pleural friction rub was heard here. In the fourth week evidence of pulmonary consolidation became apparent in the left lower axillary and subcapsular regions. The cardiac dulness was merged with this area, so that the question arose at once whether there was not a pericardial effusion with posterior pulmonary signs. Roentgenograms showed no enlargement of the cardiac shadow but some opacity apparently behind the heart, as indicated in an oblique view (Figure 3).

Fig. 3.—Case 3. Roentgenogram of chest, showing opacity lateral to apex of heart and apparently caused by a pneumonitis posterior and lateral to the heart.

This was interpreted as an area of pneumonitis extending from the pericardial inflammation. Very gradually resolution occurred and very gradually the pericardial friction rub vanished. Multiple small transfusions and diathermy in the area of pneumonitis were the forms of treatment used in conjunction with a general supportive regimen. Convalescence was very slow but the patient made a complete recovery.

Comment. In this case, while the physical signs except for the absence of evidence of valvular disease to a certain extent simulated those of the preceding two cases, there was never any evidence that the heart was being pushed anteriorly by pressure from behind nor any change in the cardiac outline. In addition there was evidence that the pneumonitis extended laterally more than could possibly be accounted for on the basis of pressure, and the roentgenograms finally showed extension of this pneumonitis beyond the cardiac area. The infecting agent in this case remained indeterminate throughout.

Case 4. The patient, a colored woman aged 60 years, was admitted to Georgetown University Hospital on March 29, 1930. In childhood she had diphtheria and scarlet fever. Since then she had always been well until a few weeks before admission when she began to have a little effort dyspnea and some edema of the lower extremities. She had pain and "fluttering" about the heart and was more comfortable when propped up in bed.

The heart was definitely enlarged, the apex beat being diffuse and in the 6th interspace outside of the nipple line. The aortic arch was widened. A systolic crescendo murmur was heard at the apex, extending into diastole; the second aortic sound was very loud. The lungs were clear. The liver and spleen could not be felt. The blood pressure, blood Wassermann and Kahn tests, and the hemogram were essentially normal. The urine showed a moderate amount of albumin and casts and the non-protein nitrogen was 112 mg. per 100 c.c. of blood. The ocular fundi were negative. The roentgenogram of the chest showed what appeared to be merely a hypertrophy and dilatation of the heart (Figure 4). A few days after admission the patient suddenly died. Post-mortem examina-

Fig. 4.—Case 4. Roentgenogram of chest. Hypertrophy or effusion? Round opacity at right hilus is calcified lymph nodes.

tion revealed 500 c.c. of straw-colored fluid in the pericardial sac, which measured 19.5 cm. in the transverse diameter. The lungs showed moderate congestion. There was some fluid in both pleural cavities and in the peritoneal cavity. The liver and spleen showed chronic passive congestion. The heart muscle was flabby but there was no hypertrophy, endocarditis or significant coronary sclerosis. The kidneys were granular but only slightly contracted. Microscopic examination revealed only passive congestion of the viscera. The kidneys did not show evidence of chronic nephritis. Fibrosis of the myocardium did not exist.

Comment. This case is included in our report to show that the physical signs may be quite atypical. In this instance, of course, there was no evidence of pericarditis and pulmonary signs were absent. The condition was one of hydropericardium and there is every reason to believe that in this instance the transudate formed very slowly. The exact clinical diagnosis of the case was indeterminable, although we were inclined to consider the case one of hypertensive heart disease in spite of the fact that there was no hypertension at the time of examination nor a history of it previously, and in spite of the absence of changes in the retinal arteries due to hypertension. In making this tentative diagnosis we blinded ourselves to the dictum of Yater and Wagener, who showed that there is always evidence of a pre-existing hypertension in the retinal arteries in cases of hypertensive heart disease. Renal insufficiency due to chronic glomerular nephritis was considered. Even in the light of the post-mortem findings, however, we do not know exactly how to classify the case. The roentgenologists who had previously diagnosed the cardiac shadow as being that of a hypertrophied heart, after reconsidering the films following necropsy, maintained that they would make a similar diagnosis in the future from a similar shadow. This case illustrates the fact that the pericardial effusion must occur rather rapidly and be in a very large amount to produce the posterior pulmonary signs. It also illustrates the fact that considerable fluid may be present in the pericardial sac when the fluid accumulates slowly without causing the apex impulse or the intensity of the heart sounds to be greatly diminished. The reason for this probably lies in the fact that when the effusion accumulates slowly the tension in the pericardial sac is not greatly increased. The pericardium in this type of case is seen to be lax rather than taut.

Concluding Comment

We were interested in calling attention to these supposedly atypical clinical types of pericardial fluid accumulation because the cases presented here were observed within such a short period of time and because the literature and the text-books have very little to say about such cases. While it was impossible to check all of the articles written on pericarditis with effusion the perusal of a great many of them failed to reveal much discussion concerning similar cases. Usually such cases are considered rare instances of localized effusion, in which the fluid is confined to the posterior part of the pericardial sac by fibrinous adhesions elsewhere and the heart pushed forward against the chest wall. We feel, however, that the group of signs illustrated in this paper is usual rather than unusual. From the anatomical standpoint pericardial fluid should accumulate posterolaterally to the heart and compress the heart against the chest wall anteriorly, thus accentuating the heartbeat and the friction rub. We are inclined to believe that for this reason, perhaps, many cases of pericardial fluid accumulation are not diagnosed. Attention is drawn to the fact that the alterations in the physical signs in the lung posterior to the heart are due partly to the crowding of the left lower bronchus against the left side of the spine (tubular breath sounds and bronchophony) and partly to the relative thinness and the compression of lung tissue posterior to the distended pericardial sac (dulness). In conclusion, the dictum may be offered that the association of a pericardial friction rub with signs suggestive of pulmonary consolidation posterior to the heart usually means pericardial effusion.

References

Conner, L. A.: *Am. Heart Jr.*, 1925-26, 1, 421-433.
Scott, R. W, Feil, H. F., and Katz, L. N.: *Am. Heart Jr.*, 1929, 5, 68.
Yater, W. M., and Wagener, H. P.: *Am. J. Med. Sci.*, 1929, 178, 105-115.

I love the man who says, "I can,"
Though tough and hard the grade;
Who goes right in and works to win,
Until the goal is made!

—*Selected.*

LATERAL SINUS THROMBOSIS COMPLICATING MASTOIDITIS.*

By MORTIMER H. WILLIAMS, M. D., Roanoke, Va.

Thrombosis of the lateral sinus is always to be remembered as one of the possible complications of acute or chronic suppuration within the ear. The serious complications of mastoiditis are meningitis, sinus thrombosis, and brain abscess, named in the order of their frequency. Statistics show there is one case of sinus thrombosis to every one hundred cases of mastoiditis.

Thrombosis of a sinus must always be regarded as a grave condition and one which will terminate fatally unless relieved at the hands of the surgeon. Dench reports a mortality of 28 per cent, but states that many of those cases died from complicating diseases such as meningitis and brain abscess. Dr. Richard Travis Atkins, of New York, reports a mortality of 27½ per cent out of his series of forty cases.

However, it is generally agreed that the results of operative treatment in these cases are exceedingly good, especially if the diagnosis is made early, and proportionately bad when made late.

The recognition of this condition as a rule is not difficult, especially where we have the classical picture; suppurating ear, mastoid involvement, chills and extensive fluctuations in temperature. But at times the mastoid signs are masked, there are no chills and it is impossible to get an intelligent history. Then it is well to bear in mind that not only may a suppurative process within the mastoid be complicated by this lesion, but a middle ear suppuration, with very little, or no involvement of the mastoid structures at all, may cause this condition as well.

The case I am about to report falls in this class, and is interesting from several standpoints.

Report of Case

M. S., a boy, aged 12 years, was admitted to the hospital on the night of January 5, 1931, around ten or eleven o'clock. Had been brought in by his family physician who had found him the day before with high temperature, and the history of having had a discharging ear.

P. I.: Ten days prior to admission developed a cold and complained of pain in left ear. After two days, rupture occurred with drainage of thin yellowish pus, which became very scant two or three days prior to coming to hospital. There had been no chills.

P. H.: Sore throat five weeks ago, ear ached for one day at that time. Had the usual diseases of childhood. Had pneumonia four or five years ago.

Physical Findings: A thin, wiry mountain boy, appears ill. Temperature 102.4; pulse 100; respiration 22. Slight watery discharge from left ear. Region of mastoid of normal appearance, no redness nor swelling. Only slight tenderness over antrum, no sagging of posterior wall. Drum perforated at lower margin, small amount of thin discharge in canal. Heart, loud systolic mitral murmur. Urine negative. Blood showed 10,800 leucocytes.

From the findings I felt very sure that there was not much involvement of the mastoid. Ordered irrigations for the ear, and ice-cap placed over mastoid process. Next day at noon temperature was still 102. A wide incision of the drum was made, hoping that better drainage might help matters.

An X-ray of the mastoid had been made that morning, with the report of slight cloudiness in the region of antrum, but no breaking down of cells. At this time the patient had developed a bad cough, and pneumonia was suspected. An internist went over boy's chest and found considerable moisture at base of left lung. X-ray examination showed an essentially negative chest. That night the boy's temperature went to 105.

On the following morning I made another careful examination of ear and mastoid with the same findings: scant watery discharge and slight tenderness over antrum. But after palpating the mastoid tip where there was no tenderness, the fingers were drawn firmly down over the jugular, and the boy cried out with pain. This was repeated with the same result.

Immediate preparation was made for mastoid operation, assuming there was a jugular thrombosis.

On going through the cortex a normal appearing mastoid was uncovered; no breaking down of cells and no pus until the antrum was reached.

There was a small amount of pus and granulation tissue in the antrum, and on curetting this area a small sinus tract leading from the antrum across to the knee of the lateral sinus was found. This tract was no larger than the

*Read at the meeting of the Virginia Society of Otolaryngology and Ophthalmology, in Richmond, May 2, 1931.

lead of a pencil, but was definitely discolored and necrotic.

On uncovering the lateral sinus the wall was found to be yellowish in color and to have a thick leathery feel. The sinus was opened and found to be filled with a blood clot which was beginning to break down. Some of this material was scooped up with a curette and sent to the laboratory for examination; and the report came back, numerous short chains of streptococci.

Dr. Paul Davis was in the hospital and did the surgery on the neck. When he uncovered the jugular vein it appeared to be thrombosed. On tapping it in the region where the facial vein comes off there was no bleeding; a second tap was made an inch lower with the same result; a third tap was made an inch below this and there was slight bleeding.

A ligature was placed below the point of the last tap, which was about an inch above the clavicle, and the vein was resected. The wound was closed with silk and a rubber dam drain inserted. While this was being done the laboratory was typing blood of members of the family for transfusion.

I then uncovered the rest of the lateral sinus and found the clot extending well into the torcular, and, with a gouge and rongeur, the bone plate over the sinus was removed to within an inch of the posterior median line of the skull before healthy sinus wall was uncovered.

The sinus was opened and the clot removed to this point with no bleeding. A small ring curette was then passed still farther back into the sinus and the rest of clot removed, and there was a gush of blood. A compression pack was put in place.

The entire cavity was then packed with iodoform gauze and the wound brought together at the distal end with metal clips. Before the patient was taken off the operating table a transfusion of 200 c.c. of blood was given.

On the following morning the boy seemed much brighter, having rallied from the operation, and his temperature was normal.

That evening temperature began to rise and on the following morning patient appeared very septic, was drowsy and there was evidence of metastasis as any movement of right hip or left shoulder would cause excruciating pain.

The third day after operation the condition of patient was still bad; septic temperature ranging from 99 to 103, and extreme drowsiness. A blood count was done at this time and showed 25,800 whites with 93 per cent polys. A second transfusion of 200 c.c. of blood was given followed by a decided improvement. On the sixth day after operation a full dressing was done, ethylene anaesthesia being employed. On removing the gauze packing from torcular end of the sinus, profuse bleeding was encountered. Another compression pack was put in, and removed two days later with no bleeding.

The boy continued drowsy and to run a septic temperature until the ninth day after operation, when another transfusion of 200 c.c. of blood was given, and that night his temperature dropped to normal and remained there until he left the hospital two weeks later. A blood count done the day following the last transfusion showed 11,200 white cells with 79 per cent polys. Blood cultures taken at different intervals were repeatedly negative.

During the last week of the patient's convalescence in the hospital, when the sinus had granulated from the bottom, under ethylene anaesthesia, I dissected loose the scalp flaps and brought them together over the bed of the sinus and got a good union, with a decided improvement in appearance at the site of the wound.

The boy continued to suffer acutely from the arthritis in hip and shoulder, and left the hospital on crutches at the end of the fourth week. He remained in town for two or three weeks after leaving the hospital and was able to discard his crutches before returning home, at which time he had completely recovered.

Comment

In reviewing this case, certain points are worth emphasizing:

1. The absence of chills with such extensive thrombosis of sinus and vein.

2. The absence of any appreciable mastoid involvement, i. e., not enough to show signs of mastoiditis either from external examination or with X-ray.

3. The importance of palpating the jugular vein in the routine mastoid examination.

4. The presence of moisture at the base of the lung, I believe, can always be found in cases of lateral sinus thrombosis.

5. The importance of repeated transfusions of small quantities of blood to combat the bacteremia in these cases.

In my opinion, if possible, the first trans-

fusion should always be given immediately following the operation, before the patient is taken off the table.

In the case I have just reported, there is no doubt that transfusions played a large part in bringing about the boy's recovery.

711 *Medical Arts Building.*

HEALTH AUDITS.*

By A. A. HOUSER, M. D., Richmond, Va.

Audits have contributed very materially in the development of the present era of industry. As a result of having these impartial analyses, new capital has been attracted to business; but the greatest service they have rendered industry has been to bring to light weak points,—giving opportunity for correction.

The greatest economic asset of any community is not its industry, but the stability and excellency of its health. There is seldom intelligent consideration given health until extensive and often irreparable damage has been done. An explanation for the delayed interest in health audits, the essential prerequisite for health conservation and development is, that the medical mind is still largely absorbed by interest in disease. Another reason may be that treatment of the sick is relatively easy as compared to the development of an intelligent interest in health. The applicant for a Health Audit has a very different mental attitude from the applicant for a Physical Examination to determine the cause of disturbing symptoms. The Health Audit patient tends to a mental outlook of constructive optimism in contrast to one of pessimism in the patient with symptoms.

The Health Audit is the only means of developing in the individual a perspective by which he may realize his normal health potentiality, which is never realized until the individual recognizes that his health is his business; and the physician's place is primarily that of a teacher, helping him to develop his health resource.

The Health Audit must maintain a routine procedure of the Physical Examination with even more exactness than in the examination of the sick; this must be supplemented by a knowledge of the patient's habits, physical, mental, and emotional.

Proficiency in the art of human understanding is an essential prerequisite for the health auditor, but art in medicine is apt to lead astray, if not inseparably connected with Science.

In viewing a cross-section of society, the need for a universal Health Audit is suggested.

Figure No. I is a graphic drawing estimat-

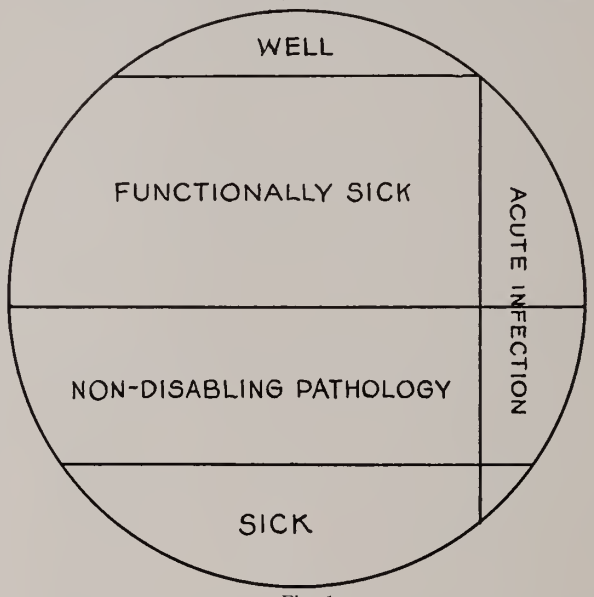

Fig. 1

ing the proportions of persons who are well, functionally sick, possessing non-disabling pathology, sick, and those affected by acute infections.

The well group is very small.

The group of functionally sick are people in whom no pathology can be demonstrated, but who are not as effective as they should be, mainly on account of a faulty living technique.

There is a large class who have demonstrable pathology from slight to grave, that are still in industry, many of whom are not aware of their condition.

The sick class is infinitely larger than the group who deserve the classification of well.

Acute infections affect to some degree all classes, the well slightly, the sick less than the other classes on account of less exposure. By an analysis of medical literature, it would seem conservative to estimate that 75 per cent of medical effort is concerned with sickness, and a larger part of the other 25 per cent with non-disabling pathology. The amount directed to individual health is too small to estimate.

If 50 per cent of medical effort was diverted

*Read by title at the sixty-first annual meeting of the Medical Society of Virginia, in Norfolk, October 21-23, 1930.

from the consideration of sickness as a primary vocation to health, in time a cross-section of society would develop somewhat like Figure II, in which the well would be the predominant class.

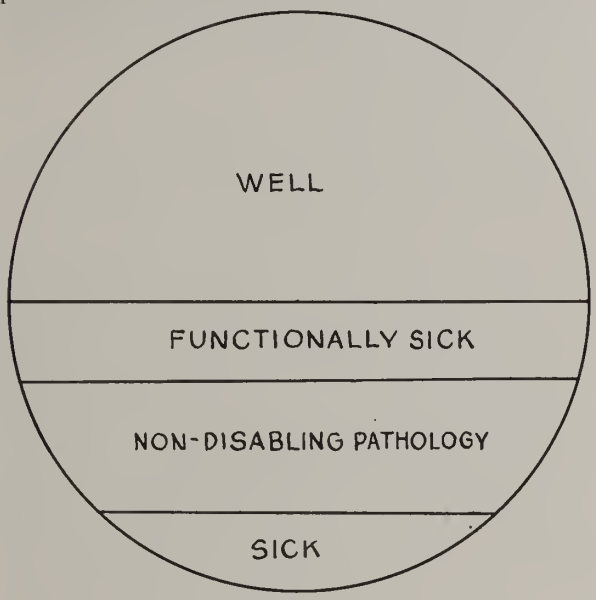

Fig. 2

Medical schools have been slow in developing a curriculum placing sufficient emphasis upon health. In the absence of visible pathology, the physician is inclined to take the patient's word for his degree of health. A science of diagnosing health is as capable of development as has been the diagnosis of disease. It is going to be a more difficult task and likewise of more value to humanity. Some of the more important causes of premature health decline are accidents, acute infections, food errors, faulty elimination and fatigue. Fatigue is increasing more rapidly than any other of the causes of health decline. Physical and emotional fatigue is fast becoming a universal scourge. The rapid development of environmental complexity has increased so much faster than the individual's philosophy to cope with them, that a majority of the people could be conservatively classed psychopathic. While physical and mental fatigue tend to cause and exaggerate emotional fatigue, some of the more important causes are worry, fear, hurry, anxiety, anger, hate, social competition, vocational misfits and sex problems. The ability to diagnose emotional fatigue will always require some development in the art of human understanding, that closely simulates a sixth sense, but many definite scientific procedures are already available. A careful blood pressure reading over a period of five or ten minutes at different times has the possibility of being of the greatest help.

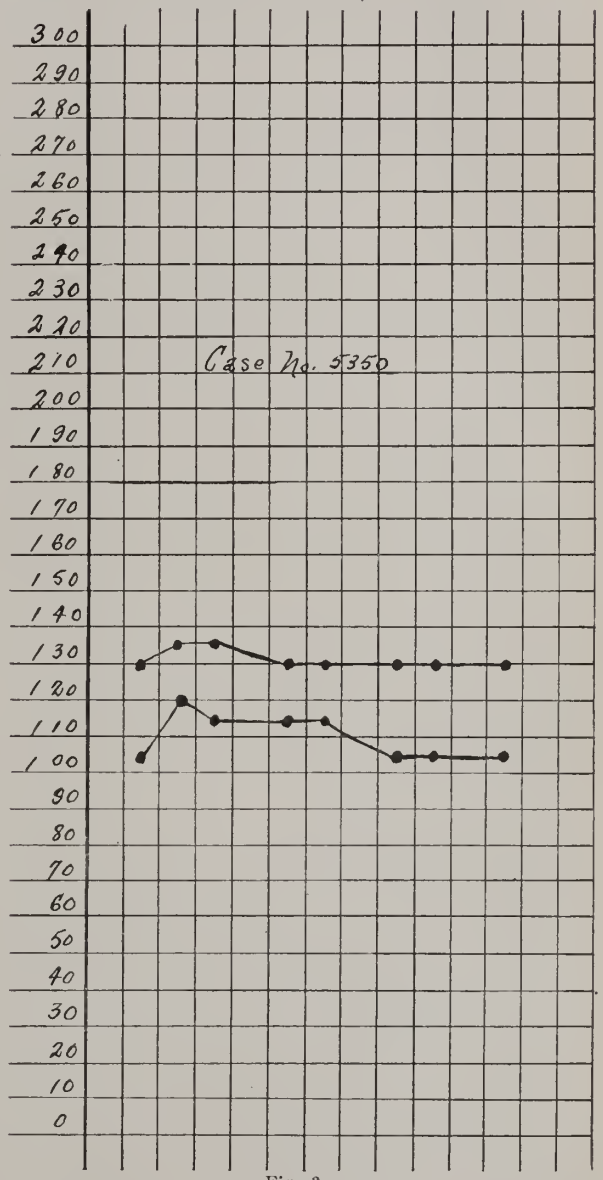

Fig. 3

Figure No. III is blood pressure tracing of a typical case of emotional fatigue. Figure No. IV is a case more exaggerated. The reading was made at the beginning of examination and repeated after examination was finished. To get information from blood pressure reading, many observations should be made over a period of five minutes or more, engaging the patient in conversation to divert attention from the procedure as much as possible.

Emotional disturbances tend to have a variable blood pressure with variations both above and below normal and more disturbance of the diastolic pressure than systolic.

The correction of emotional disturbances is made easier by teaching a constructive health programme.

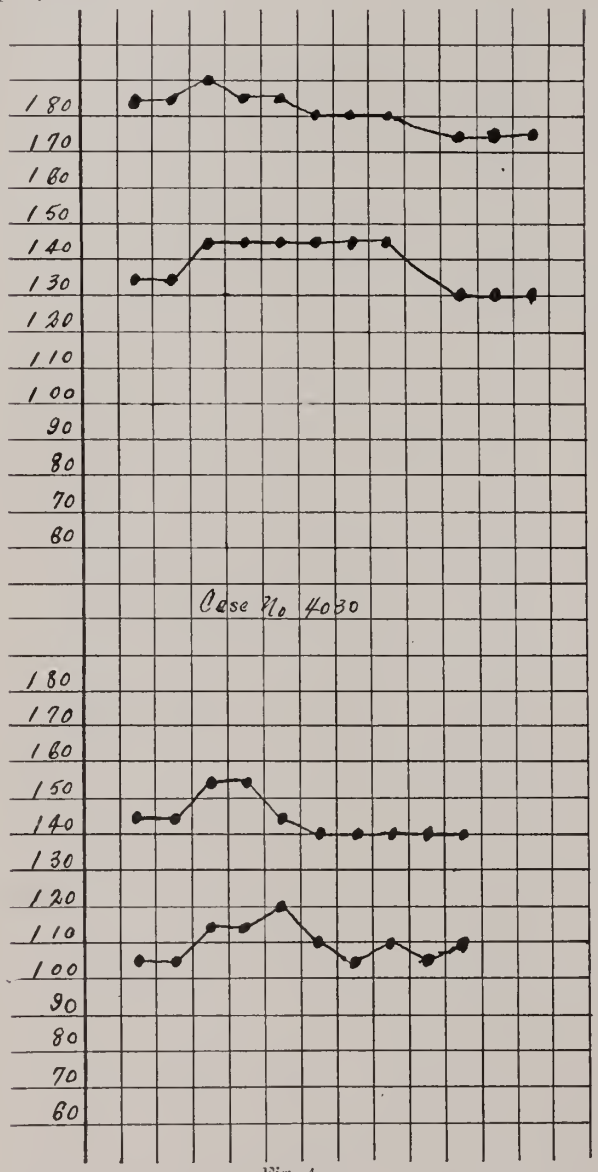

Fig. 4

There are five fundamental prerequisites for everyone to have in order to achieve a stable condition of health. First, he must develop personal honesty. As a rule people are honest with everyone but themselves, but very few people have ever given much consideration to dealing with themselves in an honest manner. They seem to have the conception that they have a perfect right to treat themselves any way and regard individual mistreatment as a virtue rather than a vice.

It is impossible to develop a high state of physical well being until the individual recognizes that his greatest asset in life is his health and that taking care of it is his most sacred and important duty.

Vocational stability is the next important achievement. The grind of industry is too depleting unless there is infinitely more to the task a man performs than the consideration of the monetary recompense he receives.

Happiness is the third essential development for health. Many have the conception that their lack of happiness is the result of outside forces, rather than any fault of their own. Outside influences may give pleasant and joyful reactions to the individual, but happiness is the result of the individual's reaction to his environment, and is produced directly in proportion to his ability to comprehend love and render service, not by being loved and served.

There are definite laws of health that must be understood and complied with in order for the human race to be well, that are just as essential as the laws governing the successful handling of any other animal, yet the successful stock raiser is very careful in seeing that his herd has every opportunity to develop a high degree of biological perfection, and often fails to give his own organism any consideration at all.

In addition to this, an intelligent individual requires a periodic Health Audit in order to dispel medical fear and develop health optimism. The Health Audits should acquaint the individual with his physical and mental potentiality.

Figure No. V is a chart outlining the normal curve of physical and mental potentiality. It presumes one hundred years should be the average life. Physical development reaches its peak at twenty-five years of age and then gradually declines. The period of greatest mental growth is over the same period, which might be termed the period of emotional development.

Mental growth may continue to develop in a rather rapid manner until sixty-five or seventy years of age, which should be labeled as the utilitarian period, and it may continue to grow gradually upward until the end of

life. This is the philosophical period. In order for mental development to continue, the individual must have the perspective of his mental potentiality, and must respect the

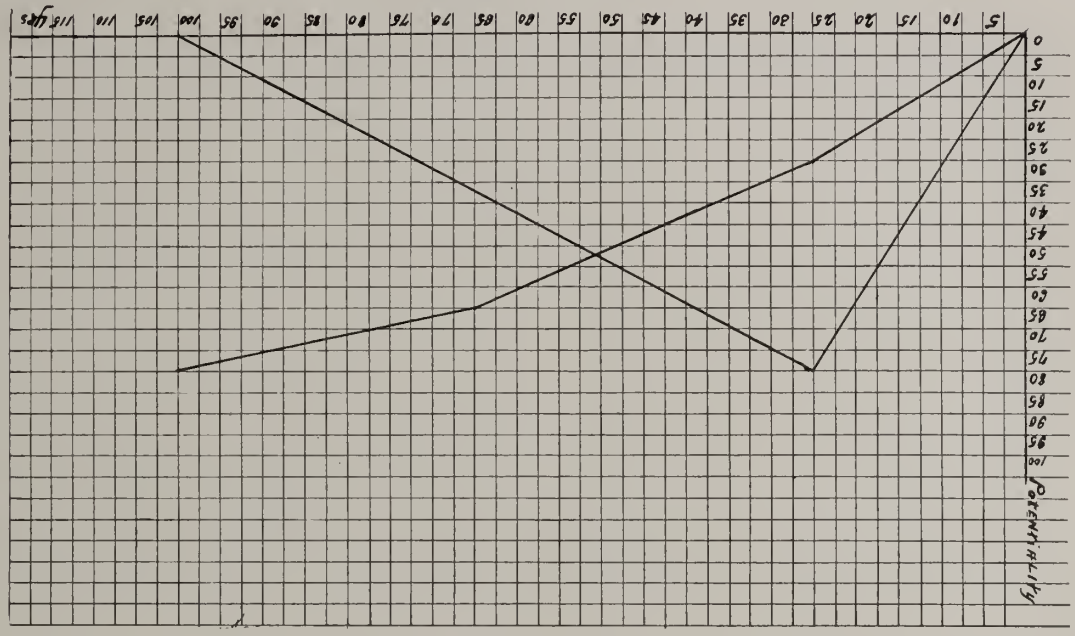

Fig. 5

curve of physical decline. Physical fatigue interferes with mental growth. The individual's value as he passes physical maturity very rapidly changes from a physical to a mental value.

A discouraging feature of the Health Audit for a beginner is the time required to observe individual improvement. Charts Nos. VI and VII represent two cases that have had a series of periodic Health Audits.

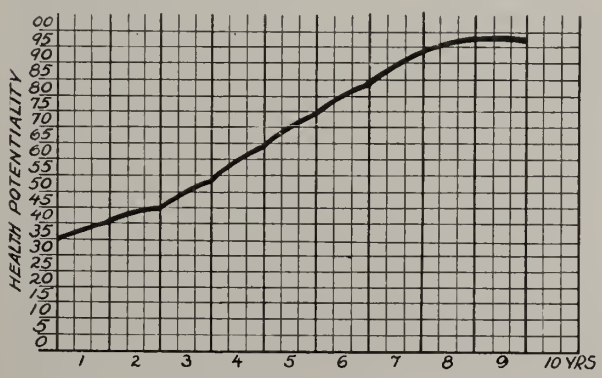

Fig. 6

Chart No. VI is a case that has been gone over each year for nine years. Small improvement was noticed in the first two years, very marked the third and fourth, and a tendency to improvement each year since.

Chart No. VII is a case that had three yearly audits without much improvement first two years; the third year a very marked improvement. Then three years elapsed without an Audit, in which the general health condition was not as good as when first seen, and an unusual response to the audit of the seventh year. These two cases are very characteristic of my experience with the periodic examination.

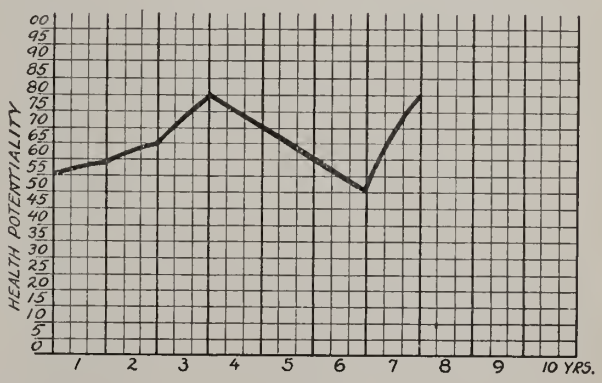

Fig. 7

The third and fourth years are usually the periods for very much greater response than the first and second. The difficulty in health development is the simplicity of the more important health habits and their entire freedom from the spectacular—which probably explains why it takes the average person two or three years to get rid of medical fear and to synchonize life with a technique of living

that is Devoid of Formula; Tending to Establish Harmonious Relationship With Normal Biological Laws.

Professional Building.

STREPTOCOCCUS VIRIDANS ENDOCARDITIS—A TREATISE.*

By ARTHUR D. PARKER, M. D., Norfolk, Va.

Of all the known types of bacterial endocarditis, that associated with the non-hemolytic streptococcus viridans is by far the most common and the most interesting. This disease, formerly considered rare, is frequent enough in incidence to demand consideration when we are confronted with any long continued febrile condition, the nature of which has not been determined.

This form of endocarditis is also termed sub-acute bacterial endocarditis, endocarditis lenta, etc., to distinguish it from the acute varieties of bacterial endocarditis, which usually are due to the more virulent strains of hemolytic streptococci, to staphylococci, pneumococci, and other pyogenic organisms, in which the endocardial lesion is apparently incidental in the course of an overwhelming blood stream infection of comparatively short duration, such as the ordinary septic conditions with which we are all familiar.

In the viridans cases, we are dealing with an organism of low virulence, and the resultant lesion on the heart valve is obviously the important focus from which numerous emboli are discharged into the blood stream. The portal of entry of this organism prior to its lodgment on the heart valves is often very difficult if not impossible to determine, although in many cases a recent history of respiratory infection, tonsillitis, chronic otitis media, and dental infection was obtained, and some definitely dated their symptoms following extraction of a tooth. The streptococcus viridans is commonly found associated with such conditions.

One thing appears certain, viz., that endocarditis of the viridans type is conditioned upon a previously damaged heart valve, and particularly a valve that has been damaged by rheumatic fever. In this connection it is interesting to note that non-hemolytic streptococci have frequently been recovered by blood culture from undoubted cases of rheumatic fever. The organism in these cases, however, differed from those obtained in cases of viridans endocarditis in that the complement-fixation test, which is uniformly present in the latter, was absent in the rheumatic cases and for this reason was considered a secondary invader in the course of rheumatic fever.

The symptomatology of the disease, aside from its toxic manifestations, is due to numerous emboli being swept from the affected valve into the blood stream and lodging in various organs—the kidneys, spleen, skin, and brain most often. The friable vegetations on the vale readily explain the frequent embolic phenomena. The mitral valve is most often affected, the aortic next, but no valve is exempt. The most plausible explanation of this is the fact that the mitral more so than any other heart valve is the seat of damage subsequent to rheumatic fever.

The onset is usually very insidious and for this reason tuberculosis is frequently suspected. The patient at this time is ambulatory and complains of weakness, lassitude, and perhaps some loss in weight. Careful examination reveals nothing other than an accelerated pulse, slight or no elevation of temperature, and a mild anemia. A heart murmur may or may not be heard. Later, the above symptoms become exaggerated and, added to these, there might be frequent night sweats, chilly sensations and a persistent cough. This condition may obtain for several months before embolic phenomena or a chance blood culture reveals the true nature of the malady.

As time goes on, a few months to a year or two, most often terminating within fifteen months, the patient becomes definitely worse or there may even be remissions for months during which time recovery has apparently taken place. Usually the clinical picture becomes more definite with loud heart murmur, some enlargement of the heart, signs of cardiac decompensation, a peculiar yellowish tint of the skin, described by Libman as *cafe au lait*, anemia, leucocytosis, which may reach 20,000 or more, splenic enlargement and various embolic manifestations, such as pain over the spleen, kidneys, or abdomen, and in so far as the kidneys are concerned an associated albuminuria and red blood cells in the urine. Likewise, dependent upon the size and location of the emboli, there may develop a hemiplegia or monoplegia, or sudden plugging of the lar-

*Read before the Norfolk County Medical Society, February 16, 1931.

ger vessels to the extremities with consequent pain, coldness and loss of function of the affected member. Any of the above named conditions may, so far as the patient can tell, mark the onset of the disease. I recall in particular one patient walking into the clinic whose sole complaint was sudden loss of vision in one eye, which turned out to be due to an embolism of the central artery of the retina incident to this disease. Another was admitted with right lower abdominal pain and tenderness, fever and leucocytosis, which was proven later not to be appendicitis. In children, though infrequent, the disease is often attended by cerebral accidents, such as a hemiplegia or monoplegia.

Probably no affection known to medicine offers a more striking contrast with its absence of signs in the first stages, which may be months, and the perfect clinical picture it presents later. At this time diagnosis is easy and blood culture is hardly necessary. To Libman, more so than to any other, we are indebted for establishing this clinical entity.

The fever, when present, is markedly irregular and daily remittent. Chills and sweats later on are frequent. The pulse is persistently rapid and in the beginning, more so than the temperature and general condition of the patient would seem to warrant. For this reason a heart murmur though present may be easily overlooked. Later in the disease the murmur is unmistakable and very pronounced. Coupled with a history of rheumatic fever it is very suggestive. The spleen is palpable in a large percentage of cases, especially during the latter part of the disease. It is of distinct value in diagnosis particularly if found in the early stages: Petechial hemorrhages are extremely important in completing the clinical picture and unless repeated examinations are made they will more than likely be missed. They are often found on the buccal mucosa and on the skin about the upper chest where they may appear from time to time as tiny pin-point red dots which fade in a few days. On the skin one must be careful to distinguish them from small red nevi. The conjunctiva at some time or other will show these small hemorrhages, and here they are larger, irregular and often have a flat white center. These likewise fade in a few days. The eye-grounds frequently will show large and small retinal hemorrhages.

The anemia is rather marked and progressive, the hemoglobin often being decreased much out of proportion to the decrease in the red cells. A peculiar yellowish tint of the skin is associated with this.

The kidneys may be affected by gross infarcts, a diffuse glomerular nephritis or characteristic embolic glomerular lesions which, according to Baehr, are found in no other form of endocarditis except the sub-acute bacterial type in which the streptococcus viridans is the cause in about 95 per cent of the cases, and rarely are found in any other condition.

Death usually occurs from within a few months of the active onset to a year or possibly two years and is most often due to cardiac decompensation, toxemia, and anemia.

Blood culture is frequently negative and in suspected cases should be repeated often. This is probably accounted for by the presence of bacteria in the blood stream only for a short time after being discharged from the valve, to different methods of technique in making the culture, and to the fact that many cases apparently go through phases described as bacteria-free during which time the organism cannot be recovered from the blood.

The lesion on the valve is productive, as might be expected, from a low grade infection. The surface of the vegetations is composed of blood platelet masses invaded with colonies of organisms while the patient is in the so-called bacterial stage. Deeper in the vegetations the organisms tend to disappear, and closer to the valve leaflet or adjacent endocardium we find active fibroblastic invasion with resulting dense scarring; in other words, there is a definite tendency to heal.

Libman especially entertained the view that the disease is far more common than we suppose and that many cases are never recognized and some go on to recovery, in spite of the fact that those cases which are recognized and yield a positive blood culture are so uniformly fatal. In support of his contention it might be mentioned that Oille, Dettweiler and Graham reported twenty-three cases from which non-hemolytic streptococci were recovered by blood culture. These were all mild cases running a subfebrile temperature, but exhibited no embolic manifestations. However, quite a few had heart murmurs. All of these recovered. Salus reported eighteen cases similar to these. Herrick and Warren reported a

smaller group apparently in the same category. This and the report of an occasional recovery in undoubted cases, such as those of Capps who reported six recoveries extending from six months to eleven years, surely lend weight to the argument.

The age incidence of the disease corresponds in a great measure to that of rheumatic fever, occurring most often in adolescence and early adult life. However, it has not infrequently been reported in young children.

As for treatment of the condition, nothing has been found effective. The use of dyes and mercurochrome intravenously, transfusion, vaccines, and immunized sera have been of no avail, and the latter have been condemned as harmful by some workers. Capps, who, as noted, reported six recoveries out of eight cases, used daily injection, usually intravenous, of cacodylate of soda extending over a period of seven weeks to four months. He stressed the importance of using freshly prepared drug and pushing it to the limit of tolerance, as evidenced by a strong garlic odor of the breath or diarrhoea.

Recently, in regard to etiology, the question of allergy has been raised by various writers, inasmuch as endocarditis can be readily induced experimentally by repeated injections of relatively innocuous doses of streptococci, or by a single injection of these organisms after the animals have been rendered hypersensitive by previous inoculation of horse serum. Initial injection of the living organism or their injection prior to being made hypersensitive to horse serum did not result in endocarditis. The exact method of production of this disease and the various factors responsible obviously are in doubt.

Prophylactic measures, to the extent of cautioning all patients known to have chronic valvular defects to keep themselves free from focal infection as far as possible, such as infected teeth, tonsils, etc., and the removal of suspected foci if encountered during the disease, at present seem to be all we can do to combat this condition. However, our present knowledge of the disease is sufficient to stimulate our thought toward more effective preventive measures, early diagnosis and cure.

References

Capps, Jos. A.: Arsenical Treatment of Chronic Infectious Endocarditis, *J. A. M. S.*, 1923, 165, 40.
Karsner, Howard T.: Pathology of Endocarditis, A Summary Review, *J. A. M. A.*, 1931, Vol. 96, No. 6, 411.
Kinsella, Ralph A.: Cecil's Medicine, 1927, 1029.
Leech, Clifton B.: Streptococcus Viridans Endocarditis in Children, *J. A. M. S.*, 1930, 180, 621.
Libman, E.: Endocarditis, *J. A. M. A.*, March, 1923.
Osler, Sir Wm.: Principles and Practice of Medicine, Eighth Ed., 802.
Sajous: Cyclopedia of Medicine Supplement, 1929, 485.
Swift, Homer F.: Nelson Loose Leaf Medicine, Vol. iv, 205.
Thayer, Wm. S.: Bacterial Endocarditis, *Johns Hopkins Hosp. Rep.*, 1926, 26, I.
Wright: *Jour. Path. and Bact.*, 1926, 29, 5.

211 *Taylor Building.*

OFFICE TREATMENT OF EARLY ENLARGED PROSTATES.*

By WM. D. GOODMAN, M. D., Washington, D. C.

The broad use of the word "hypertrophy" of the prostate gland means an enlargement of one or more of its lobes. The exact etiology of this is practically unknown just as is the cause of uterine fibroids. From my standpoint, chronic congestion is the most important cause. It is interesting to note that in New York City statistics were collected in a series of 200 patients to see whether gonorrhea had any bearing on enlarged prostates and it was found that a greater percentage had hypertrophy of the gland who had never had any venereal disease. This would disprove the common belief that gonorrhea is an underlying issue. It has also been brought to my observation that most prostatics are highly organized and temperamental men—the so-called Intelligentsia. Age plays a most important part, as we find 50 per cent of men over fifty years old have some enlargement of the prostate gland to a greater or lesser degree.

The early symptoms are frequency of urination, nocturia, and often dysuria. Dull aching pain over the sacral area sometimes radiates down both legs, while there is occasionally pain and a full feeling in the perineum between the scrotum and anus. As these symptoms advance, the man will tell you that he has difficulty in getting the urine out of his bladder and will make an effort to squeeze out the last few drops. The urinary stream becomes small in calibre and lacks force. The later symptoms are partial or complete urinary retention with great bladder discomfort.

The diagnosis of enlarged prostate gland cannot be made by the symptoms alone. Any vague complaint from a male patient over fifty

*Read before the Fairfax County Medical Society, November 6, 1930

years old referable to the sacral, lower lumbar or perineal area should point the finger of suspicion to the prostate gland. Then, by rectal, urethral, and cystoscopic examinations we can be more certain of our diagnosis. In my opinion, the cystoscopic is the most valuable. However, there are certain cases in which this examination cannot be done and one will have to rely upon rectal examination, symptoms, and the amount of residual urine. The cystoscope will tell you the degree of encroachment not only in the bladder but into the posterior urethra, and will also show if there are stones, diverticuli, or tumors of the bladder. Rectal examinations will reveal the degree of enlargement of the two lateral lobes, also their consistency, and will give you a lead whether there is any possible suggestion of malignancy of the gland. In cases of suspicious malignancy, an X-ray of the bony pelvis should always be done for possible metastasis.

In taking up the treatment of prostatic hypertrophy, my experience has taught me that some early cases can be relieved without operation and made permanently comfortable. This is what I would like to bring to your attention, so that you may give help to your early prostatics. The following modes of office treatment do not require any special training, and can be used by the average physician in general practice. In the main, you must direct your treatment to relieve prostatic congestion and secure good drainage through the urethra. The following methods, or their combinations, are within your grasp and can be used at your own discretion, evaluating them according to their beneficial results.

First: Prostatic massage, i. e., by index finger per rectum.

Second: Diathermy of the gland, i. e., sending electrical heat between rectum and pubis or between sacrum and pubis. This sends heat directly through the prostatic area.

Third: Hot rectal saline douches, 110° F., i. e., avoiding enema results.

Fourth: Electrical heat, i. e., direct on gland per rectum, such as the Bransford Lewis apparatus.

Fifth: Hot sitz baths, i. e., sitting in a tub of hot water for five minutes, followed by a cold rub with a Turkish towel.

Sixth: Bladder sedatives per mouth, i. e., Elixir buchu and hyoscyamus compound with urinary antiseptics, i. e., hexylmethylenamine.

Seventh: Dilating the posterior urethra with sounds, or the Kollman dilator.

Eighth: Correcting certain sexual habits, i. e., avoid prolonged or excessive intercourse.

Ninth: Advice as to the fluid intake, namely, to get the proper fluid quota in the early part of the day, i. e., before 12 o'clock noon.

Should our patient fail to improve on any of the above treatments or their combinations and the case is progressing to partial or complete obstruction, we are compelled to give relief by some operative procedure. The Punch operation offers great possibilities when practicable. Suprapubic prostatectomy, either one or two stage, has been my operation of choice. In my opinion it is an easy operation, but it is not an easy matter to lower the mortality rate, and this depends on how the patient has been prepared before the operation, and how he is handled after the operation. Urologists have come to depend on the blood chemistry, functional dye tests, cardiographic readings and blood pressure findings, and I have found it best that all pre-operative and post-operative treatment be carried out with the help of the internist.

502 *Farragut Apartments.*

THREE YEARS EXPERIENCE WITH GOAT'S MILK IN INFANT FEEDING.*

By DANDRIDGE P. WEST, M. D., Norfolk, Va.

In presenting this subject for your consideration I respectfully invite your attention to three factors concerned:

First, The goat itself;

Second, Goat's milk; and,

Third, Our experience at the Florence Crittenden Home over a period of three years.

The Goat

The much ridiculed goat of our back alleys is rapidly disappearing, and in her place has come to stay the trim well-bred milk goat of Swiss and English origin, an attractive animal in appearance, and highly efficient as a milk producer. She has entered the field of American stock breeding in response to several different and definite needs of modern American life.

*Read before the Norfolk County Medical Society, October 28, 1930.

The passing of cheap and abundant land, the consequent crowded and intensive conditions of agriculture, and the further consequence of soaring prices for dairy products, have created a demand for an animal that produces milk more economically than the cow and under conditions where a cow could not be kept. This demand the well-bred goat fulfills.

The spread of tuberculosis, a disease whose germ is often carried by the cow and her milk, creates a demand for a milk producing animal that is resistant to this disease. Again the goat answers the need.

The statistics of infant mortality, at last frankly faced by our modern leaders of social welfare, call for a food that will save the lives of children who cannot survive on the general substitutes for mother's milk. This greatest need of all is best filled by the milk of goats, with its close approach to human milk and its beneficent curative qualities. One cannot afford to remain in ignorance of such a real factor in our present agricultural and economic life.

The history of the goat in the Old World, in Asia, Africa, and Europe, goes back as far as the history of man himself. The goat seems to have been one of the first animals to be domesticated. It is found associated with man in the earliest traces of human existence, and its place of economic importance has been persistent and unquestioned throughout the recorded history of these continents.

It is curious that since the coming of the European races to this continent the milk goat has played so small a part in the development of American life. The domesticated goat was unknown to the North American Indian. But in the records of the earliest settlements in New England and Virginia the goat plays no small part. Goats were included in the list of animals brought over by Captain John Smith and by Lord Delaware. Frequent mention is made in the early annals of the colony of the fertility and rapid increase of the milk goats. In 1620 we find the record of a contract for the shipment of 400 choice milk goats from Wales to Virginia. Similarly, in the record of New England we find many references to goats and to the methods by which they were handled. But by the middle of the seventeenth century goats appear less and less frequently in the records of these two typical colonies, while the rapid growth of interest in other forms of live stock, especially horses and cows, is indicated by abundant data.

It is plain, then, that in spite of these records of goat importations the interest of the settlers centered rather early in dairy cows. In the subsequent history of American agriculture we note the rapid and admirable development of the various breed of cows, while the goats, few in number, were until recently pushed to the background. They became the objects of scorn and derision, leading a precarious existence for the most part in the suburbs of large cities, in the hands of the Irish and Mediterranean immigrants of the poorer class.

It is these outcast inhabitants of the back alleys and outskirts of our cities, the neglected descendants of the English and Welsh stock of our earlier settlers, that have come to be known as the "native" or "American" goat, answering also to the name of "common" or "scrub" goats, to distinguish them from our more recent importations of valuable and highly bred milk stock.

Why were they so indifferent to the goat, these early settlers of the Atlantic seaboard? Why did the milk goat, elsewhere so honored and valued, fall into such obscurity in the United States? The answer is found in certain fundamental laws which govern the development of agriculture as a whole.

Goats attain their greatest importance at the two extreme stages of agricultural progress—the first and the last—the primitive nomadic stage and the final crowded, frugal, and highly intensive stage. During the first stage agriculture is still undeveloped and unstable, and herds must depend for their sustenance upon range feeding rather than upon the products of the tilled fields. Into this stage the hardy, light footed goat fit admirably, sustains herself successfully, and makes a valuable return for the efforts of the primitive husbandmen. The development of the dairy cow, on the other hand, does not attain importance until conditions are stabilized to such an extent that an abundant and dependable amount of feed can be produced for her, to supplement her own efforts at forage.

Such conditions existed and were admirably developed in England and Holland, the homeland of most of our first colonists, at the time that our country was being settled. These colonists, trained husbandmen, found in their new homes for the most part such generous

soil, such favorable climate, and such an abundance of cheap and fertile land, that the maintenance of the cow, from the beginning of our history, was easily provided for and assured. In such a type of agriculture the dairy cow found conditions the most favorable possible for her development. Therefore, it is not strange that the goat, as a milk animal, fell into oblivion in the United States, although she maintained unbroken her prestige in the more crowded civilization of the Old World.

Meanwhile, in the vast countries to the south and west of the colonies a very different kind of goat history was in the making. Mexico, California, and the adjacent regions were being explored and settled by the Spanish, a race of people who in their native home, with its mountainous regions and semi-arid areas, had always held in high esteem the little milk animals who fitted best into the environment of their country. Wherever the Spanish settlers went, the goat followed them. She found in this vast new land of mountains and high plateaux conditions not unlike those of her native home. Whether she was turned loose to go back to the care of Mother Nature and her own wits, or whether she remained in the care of man, she prospered and increased. Lacking expert care, she increased, to be sure, in numbers rather than in excellence of type. Still it is remarkable that in the great bands of "native" goats that range Mexico and the Southwest today, there are many animals that persistently maintain the dairy type, and that respond to care and attention with an excellent yield of milk, although in the semi-wild conditions of their life for the past two hundred years they have been bred solely for their meat and hides. Yet these multitudinous descendants of the Spanish goats of the early settlers were destined to play an important part in the development of the milk goat industry of the United States, whose own goats, few in number, were despised and neglected.

With the coming of the twentieth century, the wiser leaders of our agricultural life were already beginning to see ahead of us those crowded and intensive conditions in which the milk goat again comes into her own as the superior of the dairy cow. For where space is at a premium, and feed is costly, the well-bred goat proves her ability to produce milk on smaller rations per gallon than any cow, and she fits happily into many situations where her larger and more clumsy rival could not exist.

So, in spite of the low estate into which the milk goat had fallen in the United States, we find as early as 1898 that the Department of Agriculture was aware of her possibilities, and was making an effort to rouse interest in the subject. So poor, however, were the prospects offered by the stock in this country, now called the "native" or "American" goat, that the eyes of the champions of the milk goat turned towards Europe, and especially towards Switzerland, as a source for supplying the need which they foresaw.

As a result of these investigations, in 1904 the first importation of Swiss goats arrived in the United States,—ten Saanens and sixteen Toggenburgs. In the following two years thirty-nine Saanens and 141 Toggenburgs were imported. After that date, the United States, because of the prevalence of hoof and mouth disease on the continent of Europe, placed a quarantine on live stock from abroad, and further importations ceased.

Those Swiss goats which had arrived before the embargo was established were widely dispersed by sale throughout the United States. Although many of the original animals died shortly after their arrival because of the hardships of the trip, for the most part they did well, and their beauty of type and heavy milk production won favor for them wherever they went.

The four types of goats that go to make up "goat aristocracy" are the Toggenburg, Saanen, Nubian, and Alpine. The Toggenburg and Saanen are closely allied in origin and type and come from respective valleys in Switzerland of the same name. The Saanen is the type of choice on account of larger production of milk and which is not quite so rich. The Nubian is of English descent, while the Alpine is the only one of the group which retained through its earlier adventures its pure strain. The reason is obvious: During the wars of Napoleon, goats found in the mountains by soldiers on the march were driven down into the valleys and kept for food and milk. The Alpine goat, however, ranged high in the cliffs, impassable by humans, and remained, therefore, unmolested, thereby preserving their strain.

The systems of breeding I will pass over.

While the goat has often been accused of

spreading diseases to human beings, especially Malta fever, I can find no evidence to bear this out except in a few isolated cases in Mexico and Texas. On the contrary, with the exception of a marked susceptibility to the common intestinal parasites, the goat is a very healthy animal. As is generally known, the goat is practically free from tuberculosis. The late Dr. Fast, Superintendent of the Nebraska State Hospital, published an article a short time before his death, going so far as to claim that in his opinion goats were not only immune to tuberculosis but that their milk acted as an immunizing agent for those using the milk.

The Milk

What are the factors that account for the sudden rise to favor of the long neglected milk goat? There are several, but first of all in importance is the growing realization that goat milk has a special quality and value quite different from that of cow milk. Understand, I do not mean to say that the goat will ever be a competitor of the cow, but the milk goat has a distinctive place and the industry is a specialty in itself.

In a letter to us from the late Dr. Harvey Wiley, he says, in part, "Upon the whole I think the health of the infant deprived of its mother's breast and the growing child would be improved by the general use of goat's milk. I think there should be a concentrated effort to introduce more numerous and larger herds of goats into this country for this purpose. The milk goat is a very different animal from the scrub goat with which we are familiar."

The Taste: In the great majority of cases goat milk cannot be distinguished from the best cow milk, except by its superior richness and its pure white color. The common prejudice against it probably has its origin in the fact that until lately the goat in the United States was for the most part in the hands of ignorant or careless people, who did not keep the goat's quarters properly clean, or who fed them improperly, and, worst of all, who often kept a buck, or billy goat, with or near the does. A properly cared for doe is absolutely free from odor, even more so than a cow; but this is not true to the same extent of the buck, especially in the breeding season. The odor of uncleanly quarters, or of the buck, is promptly absorbed by the milk, and gives it such an unpleasant taste that many persons are sure they could never use it. This unfortunate prejudice can usually be dispelled by one glassful of sweet, clean, rich milk from a goat that is properly handled. To one who has had the opportunity of using goat milk, cow milk becomes more or less distasteful, seeming thin and flat to the palate accustomed to the more delicious milk of the goat.

The Richness: The Nubian goats test very high for butter-fat, running often from 6 per cent to 8 per cent. The heavier milking Swiss breeds run from 3.5 per cent to 5 per cent. Our tests at the Florence Crittenden Home, using pure Saanen goats, run from 4 per cent to 4.3 per cent. Among other factors, goat milk does not carry the germ of tuberculosis, as does so much cow milk, because the goat is practically immune from that disease. The city of San Francisco has a contract for a daily supply of goat milk for the tubercular patients of its great City Hospital, and its usefulness in fighting the disease has been well tested and proved.

The cream is a mass of fat globules and each globule is a mass of butter-fat. The walls of the capsules in goat's milk are much thinner and the capsules much smaller than in cow's, and are, therefore, more easily digested. The casein in goat's milk is of much smaller atoms and is digested in about one-third of the time taken for digestion of casein or curd of cow's milk. Goat milk is alkaline, while cow milk is acid, a matter of great importance to patients suffering from hyperacidity.

Our Experience at the Florence Crittenden Home

Our experience actually began five years ago. As you all know, the Florence Crittenden Home is one of our charity institutions, depending largely upon donations, private or the Community fund. The Home has been too modest in its appeal for needs, with the result that it has been rather pushed to the background and the yearly appropriations from the Community fund has been cut very sharply. The economic question, therefore, has been a very great one, and wherever a cut to save can be done without material injury to the patients the effort has been made. The milk item, of course, is a large one. With the hope of reducing the expense of milk, the goat came to our minds as a possibility. The idea seemed

practical. And so through the keen interest and wonderful work of Miss Clare E. Marshall, Superintendent of the Home, the idea began to take form.

Our first doe was obtained through an Arkansas goatery and was one that was bred from a very famous buck. Through the courtesy of the U. S. Bureau of Animal Industry at Washington we mated our doe with their highly bred bucks until we could get a start. During the first year $1,000.00 was invested into this movement, and during this period we were able to save about the same amount.

Since that time we have sold off and bred until we now have a herd of throughbred Saanen goats giving sufficient amount of milk daily for the feeding of all the infants as well as general use in the Home. This represents a big saving in milk bills, and through the sale of mature does and young kids a material income is further realized.

Without burdening you with a lot of statistics I will give you at this time a general summary of our work.

First, it might be well to mention the type of material we have to work with. Most of you know the object of the Florence Crittenden Home, and it is well to remember that only primiparas are admitted. Moreover, this particular home also receives transfers from other Homes. Not all of our babies are born here. The mental scale of the mothers runs for the most part very low, while the geneological history is almost invariably bad. To begin with, then, the offsprings making up our material to work with are not the best pickings. We work with the belief, however, that a child born of poor inheritance, but given the best of environmental care afterwards, often turns out to be a better individual than one who is born of good inheritance but neglected afterwards.

For the past three years all infants and children are fed exclusively on goat milk so far as milk is concerned. This milk is gotten under the most careful hygienic measures, bottled and chilled immediately. It is never pasteurized or sterilized.

Throughout the year an average of twenty babies per month is maintained, some overlapping, of course.

So far we have found no baby who could not handle goat milk in dilutions. All babies entering the Home from elsewhere and who show intestinal upsets of various character, especially diarrhoea, have all responded well to goat milk in the same manner.

Only one case of rickets has developed in the Home among our own babies.

In short, we do not believe goat milk to be a panacea for all babies' ailments, but with the good environment, fresh air, and sunshine, we have been extremely fortunate.

In conclusion, we believe high bred fresh goat milk is an invaluable aid in the feeding of any baby and especially to weak and sickly ones.

We believe that goat milk can be made practical and profitable to any institution caring for infants and children.

And, finally, we believe the well-bred milk goat, long-suffering and neglected, will rapidly come into her own and establish a well-earned place in pediatric history.

(Acknowledgement is respectfully given to the helpful work of Irmagarde Richards, in his "Modern Milk Goats," and to Miss Clare E. Marshall, Superintendent, Florence Crittenden Home.)

THE EARLY DIAGNOSIS OF SYPHILIS.*

By W. W. S. BUTLER, M. D., Roanoke, Va.

This paper is written because there is such a prevalent custom of using local treatment for genital lesions until a positive Wassermann has developed. A brief summary is here made of about one hundred consecutive patients suspected of being luetic.

In fifty-two, a dark field examination was made, showing twenty-four positive and twenty-eight negative. In twenty-seven lesions, the diagnosis was made by a secondary eruption or other clinical evidence. Of seventy-nine genital lesions, 65 per cent were positive; my record does not follow these long enough to form an idea of what per cent showed positive in subsequent developments in the remaining 35 per cent. In this group, many apparently insignificant lesions and the abrasions associated with the oedema of acute urethral infections showed the spirillum of syphilis. A further illustration of the number of minor conditions which are really luetic is the large number of positive Wassermanns found in the routine blood tests taken on admission to the hospital. Stokes advises that even with repeated negative dark field examinations, a case should be followed four months after the

*Read before the Southwestern Virginia Medical Society, in Wytheville, March 19, 1931.

initial lesion before a diagnosis of chancroid is made instead of chancre.

The difference in point of view of the men interested in general medicine rather than in syphilis is brought out by Stokes in reports on venereal sores in the World War. Of 3,400 reported by the American Expeditionary Forces, 24 per cent were reported as luetic; in the British and French Armies with a series of 27,000, 77 per cent were found positive. The difference is explained by the fact that the latter group were examined in concentration hospitals by experts while the Americans were examined by field officers.

The technique of a dark field examination is easy if a few precautions are observed. The earlier the lesion and the less time the patient has to develop a resistance, the more numerous are the organisms. As the resistance and the positive Wassermann become stronger, the more difficult it becomes to find the organism. The first two weeks are the best and after the fifth week a small number are present. Any antiseptic, particularly calomel, causes temporary disappearance of the spirillum and frequently heals the lesion. For collection of the specimen, the surface of the lesion is mopped off, but not caused to bleed, and in a few minutes serum appears in which the spirilla are found.

Dr. Kollmer has examined the serum from the ulcer, when the organism is present with 100 per cent positives and the method has the advantage that it also shows positive where antiseptics have been used causing the dark field examination to be negative.

What have we gained by a prompt recognition of this condition? Will a few doses of neoarsphenamine cure the patient? This is the first impulse and the lay opinion. If this view cannot be corrected it is better not to recognize the condition but let secondaries come and allow nature to develop a resistance. Animal inoculations show that adjacent lymphnodes are involved before the point of inoculation breaks down and we cannot say how extensive the infection is, even in the very beginning. From the nerve cases with which I have been associated, a high per cent have no memory of an initial lesion or, if so, a short period of treatment. The mild infection is the one which has the incurable mental and spinal involvements in later years. For this reason, the negroes and the class who develop secondaries have a smaller per cent of nerve complications.

If this is so and the early treatment takes away the stimulation for development of an immunity, then it is more than ever important that once the treatment is started, it should be carried through. Moore and Keidel, in an analysis of 402 cases when courses of arsphenamin and mercury were given with no rest intervals during the first year, give most interesting light on this very question. The cases are then in two groups, the early ones with a negative serum and the later or positive serum group. After one course of treatment, i. e., up to eight injections of arsphenamine, relapses occurred in 76 per cent as compared with 90 per cent in the second group. After three courses, i. e., from thirteen to twenty injections, the first group showed only 14 per cent relapses as compared with 50 per cent in the serum positive group. While in the group receiving four courses, i. e., twenty to forty injections with corresponding mercury, the serum negative gets 100 per cent cures against 60 per cent in those who waited for a positive Wassermann.

It cannot be too strongly urged that the fresh untreated lesion is the one from which the promptest and most accurate diagnosis can be made and the time which offers the best chance of cure. The ready use of calomel powder or burning the lesion will often cure it but will do an irreparable harm to the patient.

28 *Franklin Road, Southwest,*
Medical Arts Building.

URETERAL MEATOTOMY BY FULGURATION AND INCISION: CASE REPORT.

By C. I. SEASE, M. D., Richmond, Va.

A few years ago after a ureteral meatotomy with ureteral scissors, I was rather alarmed at the bleeding that followed. Then, several months ago, I fulgurated an orifice and the patient complained of pain in that kidney for three or four days, suggestive of a partially blocked ureter from edema. I thought then of combining fulguration with incision to overcome hemorrhage and possible blockage from swelling.

A suitable case presented itself November 17, 1930. The case is reported briefly as follows:

Mrs. C. L. K., white female, married, aged 25, II Para.

C. C.: Pain in right lower quadrant, frequency.

P. H.: Patient had pyelitis of pregnancy with first baby at seven months, three years ago, which was relieved by irrigating the kidney pelvis. She also had acute pyelitis near term with second pregnancy, but was delivered, after being ill ten days, with prompt improvement. Since birth of second baby, six months ago, she has not felt well, and has been conscious of discomfort in right kidney region from time to time.

Present illness began three weeks ago with acute sudden onset, severe pain in right kidney, radiating down the course of the ureter, extending down the thigh to the knee, severe chill, high fever, vomiting. She was very ill for ten days but gradually improved under expectant treatment. She states that X-ray taken at that time was negative for stone. She has been out of bed a week and now is conscious of a sharp cutting pain on certain sudden movements, such as turning over while lying down, or sitting up, or extending the right leg.

Examination: Fairly well nourished white woman about twenty-five years of age, showing evidences of recent severe illness, such as pallor, dark rings under eyes and appearance of physical weakness.

G. U. Examination: A catheterized specimen shows red blood cells and pus cells are abundant.

Bimanual Examination shows uterus and adnexa normal. On careful palpation, a hard object about the size of a pea can be felt in the vault of the vagina and appears to be in the bladder, a little to the right side. Pressure produces the characteristic cutting pain she has had for sometime. This is thought to be a stone in the mural portion of the ureter. An attempt was made to milk it into the bladder without success.

Cystoscopy reveals evidence of an intramural stone in the right ureter as illustrated in Figure 1 and Figure A. It appears to be about one-half inch from the orifice.

I immediately fulgurated the mucosa along the course of the ureter up to the bulging caused by the stone. Then with a pair of ureteral scissors I made an incision almost to the stone. (See Figure B.) This was done under 1 per cent cocaine anesthesia, in the office and with very little pain. The patient went home, about forty miles in the country, that afternoon. There was no bleeding, and no evidence of blockage. In fact, practically no discomfort, as the patient never went to bed as a result of the treatment. A few days later, she sent the stone to me, having passed it during the second night after the treatment. Three weeks later cystoscopy showed the ureteral orifice had healed and appeared somewhat as illustrated in Figure C. Figure D is a photograph of the stone.

This case is reported, not with any claim to originality in combining fulguration and incision for ureteral meatotomy, as I feel sure it has been used and probably is being used frequently by men doing a large amount of this work. So far, however, I do not recall seeing any mention made of it in the literature. I found it a very useful and comfortable procedure in this case.

611 *Medical Arts Building.*

Intra-Mural Stone. Right ureter. Mrs. C. L. K.

STUDY OF THE NORMAL FUNCTION AND PATHOLOGICAL CONDITIONS OF THE THYROID GLAND.*

By J. LEWIS RAWLS, M. D., Suffolk, Va.

A study of the normal function and pathological conditions of the thyroid gland has caused many theories to be advanced, but in the last few years it appears that the scientific world is getting nearer a solution of some of these problems.

Over a hundred years ago exophthalmic goiter was described beautifully by Parry, a few years later by Graves and others, but not

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until 1913 was there a great advancement made when Plummer, of the Mayo Clinic, came out with an article differentiating adenomatous goiter from hyperthyroidism and exophthalmic goiter, establishing at the same time the foundation for the administration of compound solution of ioline (Lugol solution) in the exophthalmic type. He based his theory for the use of iodine in the exophthalmic goiter on the assumption of two thyroid secretions, a normal one and an abnormal one; the former caused symptoms of hyperthyroidism and the latter the characteristic toxic symptoms. The degree of stimulation, fatigue of the thyroid, the amount of secretion present at different times and unknown factors probably were influenced, he believed, by the amount of iodine present.

Before much was established as to the function of the thyroid gland, the medical treatment employed was more or less empirical, and consisted of long rest in bed, the administration of such drugs as digitalis, belladonna and hydrobromate of quinine, injection of alcohol, carbolic acid, boiling water, electricity, X-ray and many others, hoping to produce a sclerosis of the gland. Even the serum from the blood of thyroidectomized goats was injected into patients suffering with goiter, hoping to relieve them. Later various operations were employed, such as ligating part of its main blood supply, but until the last decade all the methods employed were very unsatisfactory, as the mortality ran very high in all the various form of treatments.

We have to study the functions of this gland to really appreciate why such an abundant amount of research work has been done upon it in trying to reach a satisfactory solution. It has been learned that the thyroid gland has many functions, the most important being perhaps the regulation and control of metabolism or chemical changes that go on in the body, the human body being compared to a furnace, because it consumes fuel and produces heat and energy. The process by which a furnace converts coal into heat and energy is called combustion; just so the process by which the human body converts food into heat and energy is called metabolism.

We know all modern buildings at the present time are equipped with a heating plant that works automatically by a thermostat by which the degree of combustion is regulated and the amount of heat produced is controlled. Similarly, the human body has a delicately adjusted mechanism by which the degree of metabolism is regulated and the amount of heat produced is controlled. Owing to this fact, man has a normal temperature of 98.6° F., and this is maintained in health, with practically little variation, irrespective of the meals and regardless of whether he lives in the tropic or arctic regions. It has been proved that the internal secretion of the thyroid operates this human thermostat. An increase or decrease of thyroid activity is at once shown by a corresponding increase or decrease in metabolism.

It has been found that thyroxin is the active principle of the thyroid secretion, and this contains 60 per cent to 65 per cent iodine. The amount of thyroxin present in the tissues of the average adult is 14 mg. The thyroid gland delivers approximately 0.33 mg. daily to the body, although this amount varies with the metabolic activity. The function of the gland is to maintain 14 mg. of thyroxin in the body or to deliver 0.33 mg. to it daily. Marine and Williams in 1908 stated that iodine caused a reversion in hyperplastic glands to the colloid type after two or three weeks, which bore out the research observation of Halstead, that removal of the thyroid gland in pregnant dogs produced goiters in the pups at birth. If thyroid secretion is excessive, the internal fires burn fiercely and the tissues are stimulated to a course of wasting dissipation. The patient in time develops tremors, sweating, rapid heart action, muscular weakness, loss of weight and feverish mental activity, gastro-intestinal disturbance and many other abnormal conditions. The evidence of excessive secretion suggests the beginning of a tragedy into the life of its object.

If the thyroid secretion is deficient, the metabolism of the body is depressed and heat production and gaseous interchanges are much below normal. The nervous system shows a deficiency in development. The mentality does not rise above the level of that of a small child or infant. So, physically and intellectually, the victim of thyroid deficiency gradually becomes less a human and more a beast. So, from the changes we see developing from an increase or a decrease of the thyroid activity, we conclude that we are dealing with ac-

tion which iodine produces in all forms of goiter.

Naturally we next want to know what are the etiological factors producing the pathology of the gland that causes the different types of goiter.

Concerning the cause of the thyroid changes that lead to Graves' disease we know very little. Clinicians have pointed out that the symptoms of this disease occasionally develop after some unusual excitement or emotion and that practically all patients do badly when exposed to exciting influence. There seems to be no direct evidence that emotional disturbance will precipitate the disease except possibly in predisposed individuals or those who may be already suffering from it in a mild and unrecognized form. It was not unusually frequent during the World War. We know from clinical experience that toxic as well as nontoxic goiters are much more prevalent among females than males, yet I was talking with a prominent diagnostician a few days ago and he said his experience was that goiter has been almost as frequent among his male patients as among females. I do not believe this is the general concensus of opinion. There seems to be no etiologic relationship established between the ovaries and thyroid toxicity. It seems likely that the physiologic changes undergone by the thyroid during the reproductive period of females renders it more unstable and susceptible to stimuli of all kinds and may account for its frequency among females.

Toxic substances have been suspected of having etiologic importance: among these is iodine. Bacterial toxins seem to play an important role in some cases of thyrotoxicosis, such as those which follow infections. It is an established fact that the sympathetic nervous system is markedly involved in this morbid process.

To be able to treat goiters advisedly, we should try to determine in what class they belong. In an article written by Dr. Stuart McGuire a short time ago—from which I have used several of his illustrations,—he classifies them into the following:

1. Colloid goiter.
2. Adenomatous goiter without hyperthyroidism.
3. Adenomatous goiter with hyperthyroidism.
4. Exophthalmic goiter.

1. Colloid goiters are soft and symmetrical in shape, and characterized histologically by an excess of colloid in the acini of the gland. They do not disturb metabolism, so do not cause any constitutional symptoms. This type more often develops about the age of puberty and, as we know, is more common among girls than boys. This type is supposed to be due to lack of iodine.

2. The adenomatous types without hyperthyroidism are spoken of as simple goiters, and usually are unequal in consistency and irregular in outline due to presence of new growths in the substance of the glands. They do not cause any change in metabolism; thus no constitutional symptoms arise. They usually begin in early life and grow slowly, producing deformity and frequently discomfort from pressure. The most of these cases, after about fifteen or sixteen years duration, undergo degenerative changes, then become the third type —adenomatous goiter with hyperthyroidism or toxic goiter.

3. Adenomatous goiters with hyperthyroidism show an increase in metabolism, as there is an increased output of thyroxin. Many of the constitutional disturbances develop, as we see in the exophthalmic type, yet we do not see the remissions in the intensity of symptoms, nor do they develop thyroid crises or have eye changes as seen in the exophthalmic type. Nearly all of these cases develop after forty years of age.

4. The exophthalmic goiters are most common in early life, but are sometimes seen in children and advanced age. The thyroid is moderately but symmetrically enlarged, and the microscopic examination shows evidence of diffuse parenchymatous hypertrophy, hyperplasia, increased vascularity and later increase in the stroma of the gland; also the number of cells lining the acini differ markedly in different glands, and often in the same gland, showing a change in type from cuboidal to columnar, while the colloid material normally present in the acini is less than the normal gland and often may be entirely absent.

From the findings in the different types we know iodine is indicated in the colloid as a prophylactic and cure. Iodine is not indicated, or rather it is contra-indicated, in the adenomatous type, and does not help the toxic type of adenomatous goiter unless it is a mixed

type, which is rare, but is indicated in the exophthalmic type. It should not be used as a cure, but only in preparing a patient for partial removal of the gland. Surgery is not indicated in the colloid type. Surgery is only indicated in the adenomatous type if there is much deformity, if there are pressure symptoms, or if there are signs of undergoing degenerative changes. Surgery is indicated in the toxic adenomatous type as soon as symptoms due to chronic hyperthyroidism become evident, for they will not yield to medical treatment, and, if allowed to go on, will cause organic changes to develop in the heart, kidneys and other organs.

Surgery is indicated as soon as a diagnosis of exophthalmic goiter is made, for thereby we can prevent suffering, protrusion of eyes, and a bad risk.

These cases should be put at rest, and given Lugol's solution in required amounts until the metabolic rate decreases to a satisfactory point. Then a complete operation can be done safely at one time with almost no fatalities.

Conclusions

1. I want to thank Dr. McGuire for borrowing from an article written by him last year.

2. If we do more metabolic tests, we will find a great many more patients with thyroid disturbance than we thought.

3. I cannot urge too strongly that caution should be used in giving iodine or thyroid extract promiscuously, certainly not until we have satisfied ourselves with the type of thyroid disturbance with which we are dealing; otherwise, we may entirely lose the best opportunity we will ever have to operate. If we are precautious and prepare the patient before operation, then most goiters *can be removed without great hazard.*

THE ROLE OF SEPSIS AS AN ETIOLOGICAL FACTOR IN AGRANULOCYTOSIS.

By HAROLD W. POTTER, M. D., Newport News, Va.

Many writers declare that agranulocytosis is not a clinical entity and some believe that it is an atypical sepsis. This paper is not an attempt to establish sepsis as the causative agent in this disease but merely a review of the reports of fifty-six cases and the tabulation of the history of infection in this series. Those cases in which angina was the first symptom noted have been tabulated as having no history of preceding sepsis. This has been done because angina is often a symptom of the agranulocystosis itself. It is interesting to note that in thirty-six of the fifty-six cases reviewed, a history of preceding infection was obtained. This gives a percentage of about 66 in which there was history of preceding sepsis. These cases might be used to support the theory that agranulocytosis is an atypical sepsis caused by an unrecognized organism having an affinity for the granulocytic mechanism. In addition to the tabulation of history of sepsis the writer has tabulated the age, sex and result of the case. In a brief second table the method of treatment in the cases reported as recovered has been tabulated.

There were thirty-eight females and eighteen males in the series of reports studied. The youngest patient was one and one-half years of age, the oldest was seventy-two. Most cases were in adults in the late thirties. There were seven cases reported as recovered. This gives a percentage of 12.3. Nothing can be deduced from the table of Methods of Treatment used in these cases since three of the seven received only symptomatic treatment and the other four had each a different method of therapy.

Table one tabulates the history of sepsis and table two the types of treatment used in the cases reported as recovered.

Bibliography for Table 1

1. Bromberg, L. P., and Murphy, P.: Agranulocytic Angina Following Typhoid Vaccination. *Jour. A. M. A.*, 92:1266-1267, April 13, 1929.
2. Batten, L. W.: Agranulocytic Angina. *The Lancet*, 2:440-441, March 2, 1929.
3. Blumberg, A., and Pease, E. B.: Agranulocytic Angina. *U. S. Vet. Bur. Med. Bull.*, 6:354-366, May, 1930.
4. Dayton, D. M.: Agranulocytic Angina. *Northwestern Medicine*, 9:436-437, September, 1928.
5. Dasse, H. W.: *Jour. A. M. A.*, 22:1718-1719, December, 1928.
6. Haynes, I. S.: Agranulocytic Angina. *Med. & Surg. Year Book, Phys. Hosp. of Plattsburg*, 1:297-300, 1929.
7. Dwyer, H. L., and Helwig, F. C.: Agranulocytic Angina. *Amer. Jour. Dis. of Children*, 35: 1041-1047, June, 1928.
8. Kastlin, G. S.: Agranulocytic Angina. Dept. of Pathology, Univ. of Toronto, Report. 799-813.
9. Blanton, W. B.: Agranulocytosis With Recovery. *Jour. A. M. A.*, 92:2099, June 22, 1929.
10. Stillman, R. G.: Agranulocytosis. Clinic. Div. of Laboratories, N. Y. Hosp. 805-810.
11. Talley, J. E., and Griffith, G. C.: A Discussion of Six Cases of Agranulocytosis. *Med. Clin. N. A.*, 13:1079-1090, January, 1930.
12. Trace, I. M.: Agranulocytic Angina. *Ill. Med. Jour.*, 35:36-38, January, 1929.
13. Sharp and Setterstrom: Agranulocytic Angina. *U. S. Naval M. Bull.*, 27:112-118, January, 1929.

TABLE NUMBER 1

AUTHOR	HISTORY OF INFECTION	NO. OF CASES	AGE & SEX	RESULTS
Bromberg & Murphy[1]	Typhoid Vaccination	1	Fe-50	Died
L. W. Batten[2]	No History	1	Fe-50	Died
Blumberg & Pease[3]	T. B. & Dental Caries	1	M-26	Died
D. Dayton[4]	No History	1	Fe-7	Died
H. W. Dasse[5]	No History	1	Fe-60	Died
I. S. Haynes[6]	No History	1	Fe-42	Died
H. L. Dwyer[7]	Rt. Antrum & Molar Tooth	1	M-6	Died
G. S. Kastlin[8]	Cervical Discharge for 2 years	1	Fe-24	Died
	No History	1	M-38	Died
W. B. Blanton[9]	No History	1	M-60	Recovered
R. G. Stillman[10]	Peritonsillar Abscess & Conjunctivitis	1	Fe-19	Died
	No History	1	M-30	Died
Talley & Griffith[11]	Infected Molar Tooth	1	M-56	Died
	Infected Cut on Hand	1	Fe-56	Died
	No History	1	Fe-68	Died
	Abscess Ext. Aud. Canal	1	Fe-60	Died
I. M. Trace[12]	Toxic Rash	1	Fe-36	Died
	No History	1	M-25	Died
Sharp & Setterstrom[13]	No History	1	M-24	Died
Lindsay et al.[14]	Fistula-in-Ano	1	M-63	Recovered
H. W. Potter[15]	Infected Foot	1	Fe-43	Died
W. M. Bowman[16]	Infected Tonsils	1	Fe-31	Recovered
F. C. Hodges[17]	Abscess in Throat	1	M-30	Died
	Infected Thumb	1	M-52	Died
	Infected Tooth	1	M-18	Died
A. L. Tynes[18]	Recurrent Furuncles in Nose	1	Fe-51	Died
W. H. Gordon[19]	Otitis Media	1	Fe-36	Died
	Otitis Media	1	Fe-66	Died
	Sinusitis	1	Fe-33	Recovered
	Infected Tonsils	1	M-55	Died
J. D. Gray[20]	No History	1	Fe-40	Died
	Sinusitis	1	M-34	Died
E. R. Lewis[21]	No History	1	Fe-35	Recovered
K. L. McAlpine[22]	No History	1	M-52	Died
A. W. Jacobsen[23]	Stye	1	Fe-1½	Died
	Pneumonia	1	Fe-4	Died
J. L. Lattimore[24]	No History	1	Fe-65	Died
Rose & Houser[25]	Recurrent Quinsy	1	Fe-48	Died
M. J. Keeney[26]	Carcinoma of Rectum & Pyocyaneus Inf. of Throat	1	Fe-47	Died
D. Prendergast[27]	No History	1	Fe-20	Died
L. K. Gundrum[28]	Gluteal Abscess & Rash	1	Fe-58	Died
J. C. Kopelowitz[29]	Dermatitis	1	Fe-44	Died
A. B. Jones & B. P. Potter[30]	Sinusitis	1	Fe-31	Living—not recovered
C. J. Drueck[31]	Anal Ulcer	1	Fe-45	Died
R. L. Fisher[32]	No History	1	Fe-24	Recovered
J. Moore & H. Weider[33]	Infected Tooth	1	Fe-42	Died
R. C. Whitehead[34]	Pyorrhea and Abscessed Teeth	1	M-47	Died
J. Potts[35]	Respiratory Infection	1	Fe-24	Died
	No History	1	Fe-40	Died
	Peritonsillar Abscess	1	Fe-56	Died
H. Hill[36]	Abscessed Teeth	1	Fe-46	Died
	Abscessed Teeth	1	Fe-*	Died
S. R. Roberts & R. R. Kraske	Abscess of Calf of Leg	1	Fe-72	Died—after apparent recovery

*Age not given.

14. Lindsay, J. J., et al.: Agranulocytic Angina. *Jour. S. C. Med. Assn.*, 25:489-491, August, 1929.
15. Potter, H. W.: Agranulocytic Angina. *Va. Med. Mo.*, 56:290-292, August, 1929.
16. Bowman, W. M.: Agranulocytic Angina. *Va. Med. Mo.*, 56:283-289. August, 1929.
17. Hodges, F. C.: Agranulocytosis. *W. Va. Med. Jour.*, 26:532-537, September, 1930.
18. Tynes, A. L.: Agranulocytic Angina. *Va. Med. Mo.*, 49:765-769, February, 1929.
19. Gordon, W. H.: Agranulocytosis. *Ann. Int. Med.*, 10:1008-1023, April, 1930.
20. Gray, J. D: Agranulocytosis. *J. Med. Assn. Georgia*, 18:458-463, October, 1929.
21. Lewis, E. R.: Agranulocytic Leukopenia in Relation to Acute Febrile Upper Respiratory Infection. *Cal. & West Med.*, 33:607-8, August, 1930.
22. McAlpine, K. L.: Agranulocytosis *Univ. West Ontario Med. Jour.*, 1:11-13, October, 1930.
23. Jacobsen, A. W.: Agranulocytosis. *Canadian Med. Assn. Jour.*, 22:814-818, June, 1930.
24. Lattimore, J. L.: Agranulocytic Angina. *Jour. Kans. Med. Soc.*, 30:298-300, September, 1929.
25. Rose, E, and Houser, K. M.: Identity of So-Called Agranulocytic Angina. *Arch. Int. Med.*, 43:533-548, April, 1929.
26. Keeney, M. J.: Pyocyanic Angina with Agranulocytosis. *Cal. & West. Med.*, 23:502-505, July, 1930.
27. Prendergast, D.: Agranulocytic Angina. *Canadian Med. Assn. Jour.*, 18:446-447, March, 1928.
28. Gundrum, L. K.: Agranulocytic Angina. *Arch. Int. Med.*, 41:343-345, March, 1928.
29. Kopelowitz, J. C.: Agranulocytic Angina. *Jour. Mo. Med. Assn.*, 26:320-4, July, 1929.
30. Jones, A. B., and Potter, B. P.: Agranulocytic Angina. *Jour. Mo. State Med. Assn.*, 27:151-155, April, 1930.
31. Drueck, C. J.: Agranulocytosis Case with Anal Ulcerations. *Ill. Med. Jour.*, 56:143-152, August, 1929.
32. Fisher, B. L.: Agranulocytic Angina Successfully Treated with Immuno-Transfusion. *J. Mich. State Med. Soc.*, 29:435-437, June, 1930.
33. Moore, J. A, and Weider, H. S.: Agranulocytic Angina. *Jour. A. M. A.*, 85:512 13, August 15, 1925.
34. Whitehead, R. C.: Agranulocytic Angina. *Va. Med. Mo*, 51:761-763, March, 1928.
35. Potts, J. B.: Angina Agranulocytosis. *Arch. Otolaryngology*, 9:256-265, March, 1929.
36. Hill, H. P.: Acute Leukemia and Agranulocytic Angina Following Removal of Teeth. *Cal. & West. Med.*, 5:609-612, November, 1926.

TABLE NUMBER 2
TREATMENT USED IN CASES REPORTED AS RECOVERED

Nucleinic Acid	Leucocyte Extract	Symptomatic	Immuno-Trans.	X-ray
1	1	3	1	1

The results of these tabulations, while they do not establish any definite conclusions, are suggestive enough to induce some thought as to whether or not sepsis is not at least a factor in the etiology of this baffling malady.

The case reported by B. H. Rutledge, et al.,[37] in which a boy now eighteen years of age has presented the blood picture of agranulocytosis associated with recurrent attacks of furunculosis makes one think even more seriously of sepsis as a factor. This case has been followed for fourteen and one-half years. The first attack was at age two and one-half months.

70 *Thirty-third Street.*

37. Rutledge, B. H., Hansen-Pruss, O. C., and Thayer, W. S.: Recurrent Agranulocytosis. *Bull. Johns Hopkins Hosp.*, 46:369-389, June, 1930.

A SURVEY OF FOUR THOUSAND CONSECUTIVE WASSERMANN TESTS IN CHILDREN.*

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In 1921 was published,† "A Statistical Report on the Incidence of Congenital Syphilis." The statistics published at that time were on one thousand consecutive Wassermanns in white and colored children. The positive reactions in this series were 12.5 per cent; the colored children showing 15.47 per cent, and the white children 7.04 per cent. These figures were considered, by some observers, high for both races. At that time reports on Wassermanns were made only as positive or negative, and only one test was made on each case. Doubtful reactions were disregarded or considered negative, all others were reported as positive. A careful analysis of clinical evidence in relation to negative or positive reactions was not made.

Here is presented an analysis of four thousand subsequent consecutive Wassermann reactions on white and colored children. The percentage incidence is not computed but more carefully observed facts are recorded for what they are worth.

As in the former report, the observations were made at the King's Daughters Clinic in Norfolk, Va.‡ At that time the Clinic was entirely an out-patient service and consequently few if any infants under two weeks of age were observed; consequently, the observations on those under one month of age were in fact practically during the third and fourth week of life. It is obvious, therefore, that no still births are considered and few if any premature infants. Under these circumstances, it will be observed, few infants born with manifest active or florid syphilis are included.

All of the Wassermann reactions in this series were made by one individual.§ A four

*Read before the Medical Society of the University of Virginia
†American Journal of Syphilis, Vol. 5, page 131.
‡Grateful acknowledgment is made to Miss Mary K. Coxe, R. N., for valuable assistance in the recording and compilation of data.
§Dr. H. G. Parker of the City Health Department of Norfolk, Va.

plus reaction was regarded as evidence of syphilis, even in the absence of clinical signs; but in most instances a second Wassermann test was made when no signs or symptoms were present, and especially when the blood of the mother (usually taken at the same visit) was negative.

Three plus reactions (there is very little difference in significance between three and four plus reactions) were always repeated when no clinical evidence presented, and even when clinical evidence was present, if the mother's blood was negative.

The two plus reactions referred to here were in reality plus or minus, or doubtful, and were always repeated, and were repeated several times in the absence of clinical evidence or negative reaction in the mother's blood.

A test on mother's blood also was routine whenever possible. The results of the observation are presented in table form without discussion.

No. White	2,037
No. Colored	1,963
Total	4,000

4+	Total	White	Colored
	213	24	189
4+ With Clinical Evidence	109	14	95
4+ Without Clinical Evidence	104	9	94

An occasional case (3) was negative on repeated Wasserman, even in presence of clinical evidence, and negative mother's blood; and the symptoms did not subside without treatment.

3+	Total	White	Colored
	42	9	33
3+ With Clinical Evidence	19	5	14
3+ Without Clinical Evidence	23	4	19

Eleven cases in this group with positive blood reactions and manifestly no clinical evidence subsequently were negative without treatment.

2+	Total	White	Colored
	42	19	23
2+ With Clinical Evidence	22	10	12
2+Without Clinical Evidence	20	9	11

Three of these without clinical evidence became negative without treatment.

It will be of some interest to analyse those cases of three months old and younger. Out of the 4,000, there were 372 three months old and younger. Of them ninety-four were white, and 278 colored. Fifty-two showed a positive or doubtful Wassermann: Four white, and forty-eight colored. Tables as follows:

Under One Month

	Total	White	Colored	With Evidence	Without Evidence
4+	7	0	7	4	3
3+	2	1	1	1	1
2+ None					

During Second Month

4+	26	2	24	14	12
3+	2	0	2	1	1
2+ None					

During Third Month

4+	9	0	9	3	6
3+	1	0	1	1	0
2+	5	1	4	2	3

No case under three months positive in any degree, with or without symptoms, became negative without treatment.

THE TREATMENT OF ECLAMPSIA.*

By A. L. CARSON, Jr., M. D., Fairfax, Va.

During the last two decades the treatment of eclampsia has swung between two extreme views, the radical and the conservative. The last few years have shown even more conclusively the advantages of conservative treatment, particularly in the convulsive types.

In the treatment of eclampsia, as in other diseases, the pendulum has swung from one extreme to the other. In the years gone by the sole and primary aim in every case was to deliver the patient as quickly as possible. It was then thought that the foetus alone was the exciting cause of the symptom-complex called elampsia. Therefore, immediate emptying of the uterus was advocated, and forcible dilatation of the cervix with mechanical dilators was widely practiced. As a result of these methods of acconchement force, the lower genital tract was frequently severely lacerated, with resulting shock, hemorrhage, and very frequent sepsis. This resulted in a high maternal and foetal mortality.

Realizing the inadvisability of acconchement force, but still retaining the old ideas of immediate delivery, the more progressive obstetricians began to use more skilful methods, such as incisions of the cervix, vaginal Caesarian section, and later abdominal section. The results, however, left much to be desired.

In 1909, Stroganoff and his adherents began to endeavor to enforce their ideas, based on very conservative methods, in which little attention was paid to the foetus in utero, but every means was taken to reduce the process of toxin formation in the mother and to overcome its irritating effect by the administration of morphine and other sedative drugs.

The statistics given as to the mortality in eclampsia are very variable and unreliable, and have been quoted in favor of both methods of treatment. The figures usually given are

*Read before the Post-Graduate Medical Society of Southern Virginia, September 30, 1930.

from 6 to 45 per cent maternal mortality, and 20 to 60 per cent foetal mortality (DeLee). Stroganoff reports a series of cases up to 1923, with 9.8 per cent maternal mortality. Since then he has reported a series of 230 cases, with 1.7 per cent maternal mortality. No one, even using his treatment exactly, has done so well. His treatment is ultra-conservative, and, as such, advocates the principles upon which most of the present day conservatism is built.

The Stroganoff treatment in detail consists of—

1. Removal of irritation:
   - A. Rest, absolute, in bed.
   - B. Darkened room.
   - C. Separate room and special nurses, with constant observation of mother before delivery and for twenty-four hours post-partum.
   - D. Elimination of all noise.
   - E. No manipulations or examinations except as absolutely necessary, and then usually under chloroform. No baths, no lavage, no enemas or colon irrigations (unless strictly indicated). No packs, no hypodermoclysis or intravenous medications, and no abdominal or vaginal examinations (unless absolutely indicated).
2. Use of narcotics:
   - A. Begin with morphine gr. ¼ hypodermically. One hour later, 20 to 40 grs. chloral hydrate per rectum. Two hours later morphine gr. ¼ hypodermically. Four hours later 30 grs. chloral hydrate per rectum. Six hours later 15 to 30 grs. chloral hydrate per rectum. Seven hours later 20 grs. chloral hydrate per rectum. The dosage may be varied slightly to suit stronger patients and the severer types of convulsive seizures. It is very important that enough be given the first four or five hours to control the convulsions. The patient should sleep, rousing slightly with pains if in active labor. If fourteen hours without a convulsion, lessen the dose of chloral. On the second day and no convulsions, give 20 grs. choral per rectum t. i. d.
   - B. Chloroform—10 to 20 drops at a time, not usually over 10 c.c. in twenty-four hours. It is given for all examinations, for all manipulations of any sort, when a convulsion seems imminent, at the birth of the head, and during the birth of the placenta.
3. Venesection:
   Used in about 10 to 15 per cent of cases since 1911. Indicated if convulsions recur two or three times, if a very severe one occurs, or if they continue in spite of the narcotics. Also indicated in pulmonary edema, or a very hard pulse post-partum.
4. Delivery:
   This is accomplished as soon as possible without danger to mother or child, especially the mother. Methods devoid of much manipulation are used; rupture of membranes, a careful forceps, etc., may be used when conditions are suitable. The following procedures are not done, —accouchement force, bags, or Caesarean section.
5. Maintenance of body functions:
   - A. Lungs.—Give plenty of fresh air. Oxygen is valuable used during and after a convulsion. The position of the patient should be changed at least every four hours. Mouth and nostrils should be kept cleansed and free from mucus and vomitus.
   - B. Skin and kidneys.—Warm light coverings are used with hot water bottles to feet. Hot weak tea and milk, of each 500 c.c., are given every twenty-four hours by rectum or by mouth.
   - C. Heart.—Digitalis is used if the pulse is very weak or rapid (over 110). Caffein and other stimulants are used only as strictly indicated.

The Stroganoff, or ultra-conservative treatment, which I have just outlined somewhat in detail, has many advocates. Many who have practiced and praised the rapid methods of delivery are now following the Stroganoff method. Those who have given this method a fair trial usually admit that it has lowered their mortality considerably as compared to the old radical procedures, but no one seems to be able to approach Stroganoff's low figures,

even though they have used his method in great detail. As a result, there are now many modifications of this method being used. The tendency in America is to be conservative, to individualize each case, and to try to treat the patient as well as the disease.

Despite Stroganoff's results, it is generally believed that chloroform should not be used in an eclamptic. The use of chloroform should certainly increase the degeneration and areas of necrosis always found in the liver of an eclamptic. Williams, of Baltimore, in his modified Stroganoff treatment, uses ether instead of the more toxic chloroform. DeLee, of Chicago, recommends ether or ethylene. Because of acidosis, only a small amount of any anaesthetic should be given to an eclamptic.

Glucose.—Titus, of Pittsburg, has done a great deal of work in the past five years on the carbohydrate metabolism in pregnancy. The "glycogen deficiency theory" of the origin of eclampsia is that lack of sufficient carbohydrate intake in the maternal diet plus unusual demands of foetal and placental growth cause a glycogen deficiency which is noted especially in the liver. Acting on this theory, intravenous glucose should be specific treatment. It is not specific, but it does a great deal of good in that it serves to combat acidosis, tends to repair liver damage, and thus to restore liver function and to promote diuresis. Titus and Lightbody, in 1929, made an effort to determine the average actual therapeutic dose, because over-dosage and under-dosage have been a common occurrence. They found that the most beneficial results seemed to follow the intravenous administration to an average adult of 75 grams of glucose in a volume of 300 c.c. (25 per cent sol.). The solution must be given very slowly—ninety minutes for each injection. Lesser concentrations of the solution may be given as necessary to suit the individual case, but these investigators have very definitely proven that 75 grams in 300 c.c. represents a safe and average adequate dose. The medication may be given and repeated from one to three times daily, as necessary. A specimen for blood sugar reading should be taken just before each intravenous injection of the glucose so we may have a guide to further treatment. Usually the blood sugar readings will remain low in eclampsia even after 100 or 150 grams of glucose have been given by vein. In connection with the use of glucose, it is well to remember that eclampsia is comparatively rare in the tropics where the diet is chiefly carbohydrate, and that during the World War the incidence of eclampsia among the German women was much diminished—due, it was thought, to lack of meat and a corresponding increase in the consumption of carbohydrate foods.

Schwartz and Dieckmann, in their "Important Procedures in the Conservative Treatment of Eclampsia," state that they use 1,000 c.c. of 20 per cent glucose intravenously two, three, or even four times daily, depending on the severity of the case. They also inject 5 per cent Karo syrup water into the stomach as soon as it will empty itself. They begin with 50 c.c. Karo solution, and increase hourly up to the patient's tolerance, which may be up to 300 c.c. per hour. This is continued until the patient is conscious and able to take fruit and fruit juices.

The Lazard treatment consists of the intravenous administration of magnesium sulphate. Lazard, of Los Angeles, reported his work on the use of magnesium sulphate in eclampsia in 1925. The magnesium sulphate is used to control the convulsions by its sedative and anti-convulsive effect, and by its eliminative action. The eliminative effect is due to the dehydrating action of magnesium sulphate intravenously. Its use causes tissue fluids to be drawn into the blood stream, thus reducing the edema. The tissue fluids which are drawn into the blood stream increase the aqueous content of the blood; diuresis is increased and the acute kidney block is overcome, thus tending to relieve the toxemia. Cerebral edema is reduced, the intracranial tension is thus relieved, and the coma usually begins to clear up rapidly. Lazard first used additional eliminative measures, such as hot packs, lavage, etc., in conjunction with intravenous magnesium sulphate, but soon found that the addition of these other eliminative measures made the convulsions harder to control. The essential features of the Lazard treatment are—in eclampsia with the patient in convulsions, give 20 c.c. of 10 per cent magnesium sulphate intravenously as soon after the first convulsion as possible. Repeat every hour until convulsions are controlled, but do not exceed a maximum of six doses. Blood pressure is to be taken every hour after the convulsions are controlled,

and if the blood pressure begins to rise, repeat the magnesium sulphate; also repeat should the convulsions recur. If the patient is comatose, or semi-comatose and very restless, and the blood pressure is falling, chloral hydrate and sodium bromide are given per rectum. Utmost quiet, no manipulations or examinations, and oxygen inhalations after each convulsion, are recommended. Lazard says that surgical interference in an eclamptic should be limited to assisting labor in the second stage only on definite obstetric indications.

For the five years previous to the intravenous magnesium sulphate therapy, Lazard's maternal mortality was 36 per cent. Since using magnesium sulphate he has reported a series of 142 cases with a maternal mortality of 9 per cent.

In addition to its use in frank eclampsia, magnesium sulphate intravenously has been used with much success in the prevention of convulsions—in the so-called pre-elamptic state. In pre-eclampsia, with a blood pressure of 150 or over that does not readily and quickly reduce after the usual sedative and eliminative treatment and dietary regulation, 20 c.c. of 10 per cent magnesium sulphate is given intravenously. The blood pressure is taken twice daily, and the intravenous medication is repeated if the blood pressure still remains high. This treatment usually works very nicely and it is believed that its use has prevented many cases of pre-eclamptic toxemia from developing into true eclampsia.

Magnesium salts have a direct inhibitory action on cardiac muscle in vitro, but, used intelligently intravenously in eclampsia and in the dosage and concentration described, there are no apparent ill effects. Occasionally there is a slight reaction which rapidly wears off. The pre-eclamptics nearly all complain of a sensation of warmth when the injection is given, and occasionally there is nausea and vomiting, but this rapidly clears up. In Lazard's preliminary report in 1926, he states that in over 1,000 injections he saw no accidents or severe reaction. One of the important points in using magnesium sulphate intravenously is that it must be given very slowly, and one should take at least ten minutes to give one injection of 20 c.c. It is rarely necessary to give as many as six injections, which Lazard considers the maximum. The cases I have seen nearly all responded to one or two injections of the magnesium sulphate solution, provided intravenous glucose was also used in the general treatment. Some have hesitated in using magnesium sulphate intravenously on account of the theoretical danger of cardiac or respiratory embarrassment. While I do not deny that this has occurred in a very few instances, it is only a very occasional and rare happening. Ten c.c. of 25 per cent calcium chloride given intravenously will entirely balance the magnesium effect if it should be necessary.

Lazard says that intravenous magnesium sulphate as given to an eclamptic will neither hasten nor retard labor. My own observations have been that if the patient is not in labor but is approaching labor with the uterus irritable, then it does seem to hasten the onset of labor after the patient has become quiet and relaxed and the blood pressure has come down. This is a desirable feature.

After an eclamptic patient has been treated medically and has improved, measures may then be instituted to cause the delivery of the patient if delivery is desirable and she does not go into labor spontaneously. Of course, the patient should be watched carefully to prevent a recurrence of her former symptoms, and the induction of labor should be the simplest method applicable to the particular case. Whether labor is induced by the simple rupture of membranes or delivery is accomplished by Caesarean section, it is important that the method chosen should be as devoid as possible of shock.

Occasionally conservative medical treatment fails. What must be done with these exceptional cases? If the treatment has been a combination of sedatives, magnesium sulphate, and glucose, and they have been used from eight to twelve hours and we find that diuresis is not satisfactory, that coma is not clearing or is developing, and the temperature and pulse are increasing, then it is evident that delivery must be accomplished at once. The method chosen will depend on the obstetric features of the case and the skill of the operator. Additional shock must be prevented as far as possible.

When the cause of a disease is not known, the treatment is often problematical. We do not know the real cause of eclampsia, and it may be some time before we do. Until the cause is discovered, we cannot expect too much progress in treatment. The mortality from

eclampsia is high. Eclamptics are poor surgical risks. Operative measures should rarely be instituted until medical treatment has placed the patient in as good a condition as possible. Each case must be individualized. The most conservative treatment is best. The most satisfactory treatment appears to be a combination of sedatives, glucose and magnesium sulphate.

I have tried to stress the advantages and principles of the conservative treatment of eclampsia. I cannot leave this subject, however, without saying a few words about the prevention of this disease. Eclampsia is largely a disease of neglect. The obstetrician of today watches and cares for his patient throughout her pregnancy. Prevention and the early recognition of a beginning toxemia will avert the great majority of cases of frank eclampsia. Every expectant mother should be taken seriously. If we are to prevent eclampsia, it is absolutely necessary that we supervise the expectant mother and care for her from early in pregnancy. Prenatal care has accomplished so much in the reduction of maternal mortality from eclampsia that it is more than worthwhile for this one reason alone. The physician who has his patients best interests at heart will do all he can to see that every expectant mother is given the care and supervision she deserves throughout her pregnancy. Prevention is far easier and much more valuable than cure. If each pregnant woman is given adequate and intelligent prenatal care, the problem of the treatment of eclampsia will be greatly lessened. Prenatal care is of the utmost importance in the prevention of eclampsia.

BIBLIOGRAPHY.

1. Blakely, S. B.: Stroganoff's Treatment of Eclampsia. *New York State Journal of Medicine*, January 15, 1927.
2. Brodhead, G. L.: Is Caesarean Section Justifiable in Eclampsia? *New York State Journal Medicine*, October, 1918.
3. Davis, E. P.: Complications of Pregnancy. D. Appleton and Co., 1923, p. 51-67.
4. DeLee, J. B.: Principles and Practice of Obstetrics. W. B. Saunders Co., 1929, p. 395-401.
5. Kosmak, G. W.: Toxemias of Pregnancy. D. Appleton and Co., 1924, p. 110-149.
6. Lazard, E. M.: *American Journal Obs. and Gyn.*, July, 1926.
7. McPherson, Ross: Conservative Treatment of Eclampsia. *New York State Journal of Medicine*, May, 1918.
8. Newell, F. S.: Caesarean Section. D. Appleton and Co., 1924, p. 70.
9. Schwartz, O. H., and Dieckmann, W. J.: Important Procedures in the Conservative Treatment of Eclampsia. *Amer. Jour. Obs. & Gyn.*, October, 1929.
10. Stander, H. J.: Treatment of Eclampsia by The Stroganoff Method. *American Journal of Obstetrics and Gyn.*, March, 1925.
11. Stander, H. J., and Williams, J. W.: *Journal Amer. Med. Assoc.*, February 12, 1927.
12. Stander, H. J., and Harrison, E. P. H.: Carbohydrate Metabolism in Eclampsia. *American Jour. Obs. & Gyn.*, July, 1929.
13. Titus, P.: *American Jour. Obs. & Gyn.*, February, 1922, p. 209.
14. Titus, P., and Lightbody, H. D.: *American Jour. Obs. & Gyn.*, August, 1929.

HYPERTROPHY OF THYMUS GLAND IN INFANTS—CASE REPORTS.*

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The thymus gland is supposed to be essentially a gland of infancy and childhood.

The incidence of thymic enlargement was supposed to be rare, but with the improved technic of the X-ray and constant watchfulness on the part of the general practitioner, the pediatrician and the surgeon, there is a constant increase in the number of cases reported and a great number of deaths explained in infants, otherwise explained and recorded as deaths due to congenital atelectasis or congenital heart disease.

ANATOMY AND PHYSIOLOGY

The anatomy of the thymus gland is one of marked variation. It varies in weight, shape and thickness. After birth its surfaces are molded by the organs and structures which surround it, namely, the heart, lungs, trachea and great vessels.

The concensus of opinion is that the gland enlarges up to the first or second year of life, but Hamner's researches have shown that involution as a rule does not take place until after puberty, and even then areas of functioning parenchyma last until old age, though involution may occur at any age.

Bandler, in medical gynecology, contends that the thymus gland should be classed with the internal secretory glands of epithelial type. According to him, the thymus grows up to the time of puberty and then becomes smaller. This would point to a connection between the thymus and the genitalia. Either the thymus prevents the too early development of the gonads, fulfills a function taken over later by the gonads, or else the development of the

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gonads and their secretion antagonizes the thymus.

Even though showing some retrogression after puberty, the gland functions throughout life, as acute infections result in an increase in lymphoid cells and in the number of Hassall corpuscles.

Status lymphaticus, or sudden death, often associated with enlarged thymus and hyperplasia of the other lymphatic glands, was attributed to thymic asthma, but autopsy shows no narrowing or closure of the trachea. It is due to primary heart failure, and in these individuals there is not an infrequent combination of thymic enlargement and Basedow's disease.

Diseases of the Thymus

There are several diseases of the thymus gland: congenital absence, tumors, and syphilis, but the one most important and frequently found is enlargement, the others being more or less rare and found at autopsy.

Enlargements

Enlargement is not as uncommon as one would think, as statistics show in the infant. Some of these enlargements are symptom free, others not. Roentgenograms on a series of supposedly normal children by various observers have shown a large percentage of cases with distinct enlargement of the gland.

Blackfan and Little found twenty-nine out of a total of sixty; Liss, fifty out of one hundred and nineteen; and Peterson and Miller, fifty-two out of one hundred and twenty. The percentage of positive runs about the same, varying with different investigators from about 44 per cent to 50 per cent.

There is no doubt that an enlargement of the thymus exists in a large number of new-born infants and, as it is a potential cause of sudden death, all suspected cases of enlargement, namely, in premature infants, in twins, in cases of asphyxia at birth, in infants who do not develop normally during the first month of life, in those who fail to cry lustily at birth, and in those infants who seem to be drowsy and sleepy and who take the breast poorly, should be X-rayed to determine the presence or absence of an enlarged thymus.

Symptoms

Symptoms that have been described by Lange and which are quoted in a recent paper by Pfahler as pointing to an enlargement are as follows: "Inability to cry loudly, crowing respiration when crying, noisy respiration when asleep, difficulty in nursing, twitching, fretfulness and other nervous symptoms, vomiting or regurgitation, feeble respiration, grunting, slow or retarded development, failure of the child to gain in weight in spite of all proper dietary measures, inanition, obesity, cough and hiccough."

Differential Diagnosis

Enlargement of the thymus may exist, and very frequently does, which will give rise to abnormalities of respiration and other symptoms of enlargement. Any of the following conditions may closely simulate an enlarged thymus: cerebral birth injury, congenital heart lesion, congenital laryngeal stridor, catarrhal laryngitis, laryngeal diphtheria, bronchial asthma, etc. The age of the patient, time of occurrence, physical findings and course pursued will enable one to arrive at a correct diagnosis. The therapeutic test of Pfahler—that any form of obstruction that does not yield promptly to X-ray is not due to an enlarged thymus—is an important aid in diagnosis.

Treatment

Operative interference was the only method of treatment until quite recently. In 1896, Rehn and Konig performed the first operation by merely elevating the thymus, thereby relieving the pressure on the trachea. Later, partial thymectomy was performed. However, the mortality was very high. Later, Heinecke's experiments in the shrinkage of lymphoid tissue by means of X-ray recommended itself to Friedlander, who treated a two months' old baby with good results and no mishaps. This baby had been troubled with bronchial asthma.

Shrinkage of the lymphoid tissue by fibrosis from X-ray exposure can be controlled by the frequency and duration of treatment. The simplicity and freedom from danger by X-ray, and as a rule a favorable outcome, has completely displaced surgical intervention and reduced the mortality rate. If symptoms demand urgent treatment, daily exposures may be given; if not, intervals of four or five days between treatments are preferred.

The results of Blackfan and Little, who, in two hundred cases of thymic asthma, succeeded in curing all but six by one series of treatments, is the usual experience, and Pfahler looks upon

the X-ray as a specific treatment for the disease.

Some clinics advise routine X-rays of all new-born infants; others only those suspected of having enlargements; others only of those showing symptoms, but all seem to be agreed on the one fact that all children showing enlargement should receive X-ray treatment, regardless of symptoms being present.

The following two cases are reported from practice during the past year:

Case 1.—Baby B., born August 15, 1930, 11 P. M. Normal birth. Mother had no difficulty in labor nor was it prolonged, baby being born in right occipital anterior position. Mother was para—two. Baby weighed eight pounds and two ounces. No abnormalities were noted except that the baby failed to cry very lustily after birth. Baby did not take the breast very good for two or three days, according to mother, as it had to be aroused in order to nurse. August 19th, physician was called to see Baby B., the mother stating that the baby had difficulty in obtaining its breath and it had turned blue. Upon arrival and examination, no physical findings or symptoms were found, the baby having completely recovered from his attack of cyanosis and difficulty in breathing. Six hours later the call was repeated and the same condition was said to have been present. Upon arrival the baby was found dead, having died very suddenly with an attack of cyanosis and difficult breathing. Diagnosis was made of an enlarged thymus, but autopsy was not obtained.

Case 2.—Baby C., born October 25, 1930. Normal birth. Duration of labor three hours. Baby weighed five pounds. No abnormalities noted. Baby's cry was feeble at birth. Failed to gain in weight, took breast poorly and was very drowsy. Several times during the first ten days the mother complained of baby having hiccoughs. On December 9, 1930, mother complained of baby having paroxysm of cyanosis. These paroxysms increased in frequency and severity through December 9th and 10th, until baby became dehydrated through failure to nurse on account of the frequency of the paroxysm of cyanosis and interference with respiration. There was a respiratory stridor present, due to pressure, and a large accumulation of mucus in the chest. Baby was X-rayed December 11, 1930, and showed an enlarged thymus gland, which extended to about the middle of both clavicles laterally, and overlying the right auricle. X-ray exposure of three minutes anterior and three minutes posterior was given. The clinical picture, as described above, persisted for forty-eight hours after exposure, when the symptoms began gradually to subside. Administration of oxygen and artificial respiration were necessary during this period to keep the baby alive.

An occasional paroxysm of cyanosis occurred during the next several days, when the baby was subjected to another X-ray exposure. Following this second treatment, the paroxysms of cyanosis completely disappeared, nursing improved, and the baby began to gain. Some interference with respiration still persisted. On January 7, 1931, another X-ray plate was taken, which showed a marked reduction in the size of the thymus gland, and another exposure of one and a half minutes anterior and posterior was given. At the present time the baby is practically symptom free.

The mother gives a history of the loss of a baby three years ago, at the age of one month and two days, with a clinical picture similar to this one. There are two older children in the family who have the silky hair and transparent sclerae characteristic of the status lymphaticus type.

Conclusions

1. An enlarged thymus produces both pressure and toxic symptoms.
2. Every child that gives the slightest indication of thymic enlargement should have an early X-ray examination.
3. X-ray is by all means the best method of treatment.
4. X-ray is harmless with the proper administration.
5. Regeneration of the thymus gland is frequent, and the patient should have a re-examination at varied intervals.
6. All suspicious cases should have the benefit of X-ray therapy, even when positive X-ray findings are absent.
7. Thymic enlargement is attended with great danger and many cases of sudden death in infants have been directly attributed to it, as demonstrated by autopsy findings.

Bibliography

1. Bonar, Barnett E.: *Northwest Medical Journal*, Vol. xxvii, No. 4.
2. Bandler, S. W.: Medical Gynecology.

3. Liss: *American Journal Diseases of Children*, Vol. xxiv, 1922.
4. McNeill, N. M.: Department of Pediatrics, Jefferson Med. Col.
5. Blackfan and Little: *American Journal Diseases of Children*, November, 1921.
6. Peterson and Miller: *Journal A. M. A.*, July 26, 1924.
7. Pfahler, G. E.: *Archives of Pediatrics*, January, 1924.
8. Friedlander, A. J.: *American Journal Diseases of Children*, Vol. vi, 1913.

Analyses, Selections, Etc.

Spinal Anesthesia in General Surgery.

G. Paul LaRoque, M. D., of the Department of Surgery, Medical College of Virginia, Richmond, says that in the past eighteen months he has employed spinal anesthesia in approximately two thousand cases and the results have been entirely satisfactory. At first they used this method only for operations upon handicapped patients suffering from such diseases as diabetes, kidney breakdown, and general systemic conditions, characterized by greatly impaired vitality. However, having proved its value in operations upon the lower extremities, bladder and prostate, rectum, and groin, they then used it with equal success for operations in the lower abdomen, and next learned that it was adequate for operations upon stomach, gall-bladder and kidney. Repeated tests proved that the anesthesia in many cases extended well above the clavicle, so finally this method was used in operations upon the chest wall, including operations for radical removal of cancer of the breast.

They used spinal anesthesia successfully in many cases of diffuse peritonitis, complete intestinal obstruction, perforating ulcers of the stomach and bowel, appendicitis, ruptured tubal pregnancy, rupture of the uterus, one case of abdominal pregnancy, full term, simple and complicated hernia, bladder, tumors, fractures and dislocations of the lower extremities. The patients varied in age from six years to seventy-nine. They have not employed the method in operating on babies.

The advantage of operating under the relaxation of spinal anesthesia with the lessened need for intra-abdominal packs and handling to keep the bowel out of the way, is obvious. Even in operations requiring more than one hour for performance, as will occasionally be the case for ulcer or cancer of the stomach, difficult gall-bladder operations, splenectomy or nephrectomy, it is easy to supplement the spinal anesthesia, which seldom lasts longer than an hour and a quarter, with gas-and-ether narcosis.

There will be found occasionally a patient with deformity of the spine in which it is difficult or impossible to insert the needle at the proper location for lumbar puncture. They have routinely made the puncture and injection with the patient lying on the side with knees drawn up and shoulders down. In a few cases they found it difficult to make the puncture and have had the patient sit up and bend forward to increase the space between the bones. Ephedrine has been used hypodermically with morphine given a half-hour before the patient is carried to the operating room, though this has been omitted in some cases with extra high blood pressure, either before or during operation. Throughout the operation the head of the patient is kept low. Following operation, the foot of the bed is kept elevated for from one to four hours.

It is considered essential to have a trained anesthetist watch with scrupulous care every patient's general condition and blood pressure, though there have rarely appeared signs of danger.

The author states that they often carry on a conversation with the patient while operating, and many intelligent persons are quite interested in discussing the technical procedure. Doctors, medical students, and nurses have naturally been particularly satisfactory subjects. Reasonable speed and dexterity are necessary, and the self-assurance and poise of the surgeon inspires the patient's confidence.

Vomiting may be stopped by the application of cold cloths to the face and neck, and by instructing the patient to breathe deeply through the mouth.

Anesthetization could not be secured in a few patients in spite of giving what was thought the proper injection of the drug.

There have been a number of cases in whom the blood pressure was very low, and some desperately sick with intestinal obstruction, peritonitis and other terrible diseases requiring dangerous operations, in whom toward the end of the operation the blood pressure could not be recorded. In these cases ephedrine was given, occasionally adrenaline, and in all cases in which there was shock before starting, or in which a difficult or prolonged opera-

tion was anticipated intravenous injection of salt solution was given. Inhalations of CO_2 are beneficial in raising a low pressure.

No patient has died from the anesthesia either on the table or after the operation during the time that the drug could have had any effect. They lost one patient on the table toward the end of the operation for ruptured uterus with massive intra-abdominal hemorrhage, though they cannot say that the spinal anesthesia had anything to do with the death. In a patient with rupture of the uterus and massive hemorrhage following unsuccessful attempt at delivery of full term pregnancy, they could not reasonably ascribe the death to the anesthesia employed whatever it may have been.

There have been few post-operative complications. There has been such a diminution in respiratory complications that cough or pneumonia are no longer anticipated, but there have been at least half a dozen recognizable cases of pulmonary atelectasis. There are nothing like as many cases of vomiting and headache as are expected as a part of etherization.

Concerning the much dreaded motor-sensory paralysis, these are a myth. Organic spinal cord paralysis cannot be produced by the proper method of making a puncture between the second and third, or third and fourth lumbar vertebrae. Hundreds of cases have been examined for loss of motion and sensation in this group of two thousand, but no disturbance of normal has been seen after the anesthesia has worn off. Nowadays they never mention the subject or examine them afterwards, for fear the suggestion might result in hysteria.

Summary: The author believes spinal anesthesia should be used upon all patients needing operation who are old enough to cooperate while the needle is being introduced for lumbar puncture. The contraindications are only in those patients in whom the puncture is impossible or unwise, i. e., because of ankylosis of the spine in this location, or in cases in which there is infection of the soft parts of the back exactly at the point for needle puncture. It has been given to some patients as many as five times, usually after several days interval, though in a few cases it was given a second time within forty-eight hours.

He considers spinal anesthesia one of the greatest advances made in the progress of surgery since the introduction of ether. It has an extremely wide field of usefulness. It has been employed with the utmost satisfaction in operations in all parts of the body below the clavicle.

It should be employed in preference to ether, and is a life-saving method in people handicapped or in some way unsuited to the administration of ether.

It is safer than large quantities of novocaine administered by local infiltration and nerve block. (*Southern Medicine and Surgery*, April, 1931.)

Woman's Auxiliary, to the Medical Society of Va.

President—*Mrs. J. Allison Hodges*, 5511 Cary Street Road, Richmond.
President-Elect—*Mrs. M. N. King*, 1314 Westover Avenue, Norfolk.
Secretary—*Mrs. James K. Hall*, 3011 Seminary Avenue, Richmond.
Treasurer—*Mrs. Wm. Branch Porter*, 5125 Cary Street Road, Richmond.

Our Annual Meeting.

To the Members:

The annual meeting of the Medical Society of Virginia will be held in Roanoke, October 6th-8th. The Women's Auxiliary is always held in conjunction with this meeting, and we are hoping for a large attendance. A gathering of this kind has great possibilities and is always inspiring. It affords the opportunity for the exchange of ideas; it gives one a new and broader vision of the work, and we also have the pleasure of meeting old friends and making new ones.

The first real meeting of the Auxiliary, after its organization in Norfolk, in 1922, was held in Roanoke in the Fall of 1923. All who were fortunate enough to be present then will remember what an interesting occasion it was and the many delightful social affairs; so we are looking forward with joy to returning to Roanoke this Autumn.

Mrs. John O. Boyd, Roanoke, Va., the local chairman, is giving cordial co-operation to the officers in planning the program, and hopes to make this a most interesting and helpful meeting.

There will be two business sessions: The first on Wednesday morning, the 7th, when the reports of the officers and chairmen will

be given, and also an address by one of our guests of honor, Mrs. Walter McNab Miller, from the American Child Health Association, of New York.

Thursday morning there will be a talk by Virginia's New Health Commissioner, Dr. Warren F. Draper, followed by several "Round-Table" discussions of plans for the work of the Auxiliary for the coming year. We hope every one will take part in this informal Forum, and we will welcome suggestions.

Come to Roanoke on October 6th, and stay through the 8th, and make this the biggest and best Convention in the history of the Auxiliary.

Sincerely,

Mary Gray Hodges,
(Mrs. J. Allison Hodges),
President, Women's Auxiliary to Medical Society of Virginia.

Panoramic View of the Women's Auxiliary to the A. M. A.

Excerpts From Report by Mrs. Wayne Babcock on The Eastern District

According to the Constitution of the National Auxiliary, the first Vice-President is automatically Chairman of the organization, the three other Vice-Presidents being organizers for their section of the country. Mrs. Southgate Leigh, of Virginia, therefore, holds this Chairmanship, and the Eastern District is her particular responsibility. At her request a series of four articles is being prepared by her Committee, in order that each District may be cognizant of the progress of its own State, as well as that of the other three sections. The individual State journals have been generous in the extreme in the space they have allowed their Auxiliaries, and this additional courtesy of reporting the Auxiliary situation in other States is deeply appreciated, for there is a growing desire to know "what others are doing."

New Hampshire stands alone as the only New England State 100 per cent organized and cooperating with the National Organization. Last year the State Auxiliary had misgivings as to its necessity and usefulness, but an urgent request from the Medical Society that the women remain organized, dispelled all doubts. During the year following, Mrs. Hubbard, wife of the State President, visited every county, which encouraged and stimulated the growth of the unit auxiliaries.

The New Jersey Auxiliary made pilgrimages to State institutions, set apart one meeting when the mothers of physicians were entertained, and sponsored various health meetings. The Essex County Auxiliary, assisted by the physicians, succeeded in establishing a course of health talks, in cooperation with the Y. M. C. A. of Newark, emphasizing especially prenatal care and information which would aid the mothers of babies and young children. Last year Mrs. James Hunter, Jr., New Jersey's State President, visited every county, as did Mrs. Walter Jackson Freeman in Pennsylvania, during her Presidency. One cannot help drawing the conclusion that personal contacts are necessary for county development and success.

Virginia is active in spots. The doctors encourage the Auxiliaries, as they believe that through them education with regard to the menace of State medicine can be spread.

The two subjects upon which the Auxiliary is concentrating its efforts are:

1. Annual Examinations of children before entering school, by their family physicians and taking the treatment they prescribe. This we hope will also make more popular the annual physical examinations of adults.

2. Using our influence to have prospective mothers attend the Prenatal and Postnatal Clinics, which our doctors are establishing in various sections of the State. Education along these lines will greatly reduce the mortality in mothers and children. We believe this is the most needed and the most important work we can do for Virginia.

Ohio for several years has been sending representatives from a few organized counties to the National meetings, but as yet there is no State Organization. As our friend and advisor, Dr. Upham, lives in Ohio, it is felt that he will advise the National Auxiliary when the auspicious time arrives for the establishment of a State Auxiliary.

The District of Columbia seems so completely diverted with Washington affairs that the Auxiliary which so capably cared for the A. M. A. meetings some years back seems to have gone into retirement.

Delaware, in a breathless, better-late-than-never manner, has completely caught up, is most interested and active, and has entered

upon serious work by assisting the men of the profession in establishing a medical library in Wilmington. They will cooperate with Philadelphia at the time of A. M. A. and the eastern section will introduce them with pride to the National Organization.

West Virginia is up and doing, and you may expect still better things from the State this year.

Maine, Massachusetts, Rhode Island, Vermont and Maryland have reported the interest of individuals, but no organized effort. Queries from different localities in New York as to why there is no Auxiliary have been answered with the statement that several years ago the House of Delegates voted unanimously in favor of the Auxiliary and authorized its organization. The same year Connecticut voted favorably, but no definite steps have yet been taken, and so, we shall still hope!

Pennsylvania has surely discovered the rhythm in which its Auxiliary work is best done, for concrete accomplishments have been turned out regularly, year by year. Of the three thousand dollars contributed last year to the Medical Benevolence Fund, more than two-thirds was contributed by the Auxiliary. A definite trend toward educational meetings is felt all over the State and socially it is hoped that the carefully formed Philadelphia plans for the next meeting will bring honor and glory to the Keystone State. Not only are the adult members of the Auxiliary meeting, but a group of the most charming and good-looking daughters of doctors are working together in order that they may know each other and work in unison for the comfort and pleasure of the A. M. A. guests when they come to Philadelphia in May. Verily, who can question the wisdom of the Auxiliary, when it brings about so much willing work in behalf of the medical men of the country?

The Truth About Medicine

In addition to the articles enumerated in our letter of May 29th the following have been accepted:

Carel Laboratories.
- Alpha-Naphco Camphor Nasal Unguent.
- Alpha-Naphco Cones.
- Alpha-Naphco Menthol Suppositories.
- Alpha-Naphco Rectal Suppositories.
- Alpha-Naphco Zinc Stearate Camphor Ointment.
- Alpha-Naphco Zinc Stearate Powder.
- Alpha-Naphthol Camphor Oil.

Lederle Laboratories, Inc.
- Liver Extract—Lederle.

NEW AND NONOFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Syrup No. 112 Ephedrine Hydrochloride.—It contains ephedrine hydrochloride—Lilly (New and Nonofficial Remedies, 1931, p. 175) 0.22 Gm., in 100 c.c. (1 grain per fluidounce) and alcohol, 12 per cent. Eli Lilly & Co., Indianapolis, Ind.

Quiniobine.—Quinine bismuth iodide rendered soluble in olive oil by means of lecithin. Each c.c. contains 0.03 Gm. of bismuth, 0.03 Gm. of quinine, 0.075 Gm. of iodine, and 0.22 Gm. of lecithin. Quiniobine is proposed as a means of obtaining the systemic effects of bismuth in the treatment of syphilis (New and Nonofficial Remedies, 1931, p. 94). It is claimed that, since in Quiniobine the quinine bismuth iodide is soluble, the injections are usually only slightly painful and the dosage is more accurate than with suspensions of quinine bismuth iodide. It is supplied also in the form of 2 c.c. ampules. Spicer & Co., Glendale, Calif. (Jour. A. M. A., June 6, 1931, p. 1953.)

Calcium Gluconate.—It contains calcium equivalent to not less than 12.4 nor more than 12.8 per cent of calcium oxide. Calcium gluconate is used to obtain the therapeutic effects of calcium. It is more palatable than calcium chloride for oral administration and for hypodermic or intramuscular use is nonirritant.

Calcium Gluconate-Pfizer.—A brand of calcium gluconate—N. N. R. Chas. Pfizer & Co., Inc., Brooklyn, N. Y.

Concentrated Pollen Antigens—Lederle.—Liquids obtained by extracting the protein from the pollen of plants with a liquid consisting of 67 per cent of glycerin and 33 per cent of a buffered saline solution. For a discussion of the actions and uses, see Allergic Protein Preparations, New and Nonofficial Remedies, 1931, p. 23. Concentrated pollen antigens —Lederle are marketed in packages of fifteen syringes containing increasing dosages; also in supplementary treatment packages of five syringes. The following product has been accepted: Concentrated Pollen Antigen (Lederle) Ragweed Combined (Common and Giant Ragweed in equal parts). Lederle Laboratories, Inc., Pearl River, N. Y. (Jour. A. M. A., June 13, 1931, p. 2036.)

FOODS

The following products have been accepted by the Committee on Foods of the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in Accepted Foods:

SMACO (206) Powdered Whole Milk (S. M. A. Corporation, Cleveland). A powdered spray-dried whole milk hermetically sealed in tins in an atmosphere of nitrogen. It is claimed by the manufacturer that each 12 ounce can will make 2.8 quarts of liquid milk of normal strength.

SMACO (208) Powdered Skim Milk (S. M. A. Corporation, Cleveland). An almost fat free skim-milk powder hermetically sealed in cans in an atmosphere of nitrogen. This product is intended especially for infant feeding, each 8 ounce can being claimed to be equivalent to 2¼ quarts of normal strength liquid skim milk.

Mead's Powdered Lactic Acid Milk Noncurdling No. 2 Plain (Mead Johnson & Co., Evansville, Ind.). A powdered, spray-dried homogenized milk containing added lactic acid. It is claimed that the powder may be readily mixed with cool or hot water to form a fine suspension. The mixture may be boiled with-

out curdling or change of color or taste. It is recommended for infant feeding.

PROPAGANDA FOR REFORM

Use of Salinized Water in Industry.—At the present time salines are regarded as preferable to dextrose in the prevention and treatment of factory cramps due to excessive loss of fluid and salines through sweating. Both prevention and treatment of cramps are well abetted by the intake of dilute saline solutions to compensate for loss through sweating. It is, however, undesirable that tablets of salts be taken into the body as such. It is better that the entire water supply be treated with salt to the extent of 1 per cent. A strength from 0.3 to 0.5 per cent, being more palatable, may lead to more extensive use, especially if kept at a temperature from 47 to 52 F. (Jour. A. M. A., June 13, 1931, p. 2055.)

Zinc Chloride in Cancer —The use of zinc chloride and similar caustics in the treatment of cancer has been practically abandoned by all except the "cancer cure" quacks. Such caustics are difficult of control, so that there is destruction of healthy, as well as of malignant, tissue; their action is slow, thus unnecessarily prolonging the pain of removal. Much better results can be obtained by the judicious use of surgery when the growth is operable, or by the use of radium and roentgen rays when the disease has advanced beyond the chance of its complete removal. The use of such caustics has been abandoned also by the progressive dermatologists in the treatment of small epitheliomas of low malignancy; they use, instead, radium, roentgen rays, or coagulation with high frequency currents. (Jour. A. M. A., March 7, 1931, p. 797).

The Control of Narcotic Addiction.—Narcotic addiction is again the focus of an extraordinary amount of attention. The results of investigations concerning the subject are being made public. The taking of narcotics is usually an attempt on the part of some one with little will power to achieve a state of euphoria or artificial happiness. The addict finds withdrawal accompanied by exceedingly unpleasant symptoms and tends to succumb again. Apparently it is possible for an experienced physician to carry an addict through the witdrawal period with relatively little distress. The importance of narcotic preparations should not be under-estimated. Nevertheless, there exist in medicine innumerable occasions when one or more of the relatively non-habit-forming sedatives, narcotics, hypnotics and analgesics may be employed to substitute for an opium derivative. A series of articles is to be published in an effort to indicate the relatively few instances demanding the administration of opium or cocaine derivatives and the many available substitutes. It is estimated that under 25 per cent of nartotic addiction results from prescriptions by physicians in cases in which such prescribing may not have been absolutely necessary. The physician must try to limit his prescribing of narcotics absolutely to those situations where they are indispensable. The medical use of narcotics in the United States appears to surpass that of any other nation. Efforts are being made to limit the prescribing of narcotics to those instances where their use is indispensable. (Jour. A. M. A., March 14, 1931, p. 862).

Research for a Non-Habit-Forming Substitute for Morphine.—The Committee on Drug Addiction of the National Research Council announces a large collaborative research in alkaloidal chemistry by chemists and pharmacologists of this country. Apparently the present object of the committee is to prepare a non-habit-forming substitute for morphine that will yet possess the desirable action of morphine. (Jour. A. M. A , March 14, 1931, p. 863).

What One Newspaper Did to Protect the Public Against Charlatans.—Last July, the Philadelphia *Record* started to look into the problem of medical quackery and published a most interesting and enlightening series under the general title "Bootlegging the Healing Arts." The *Record* called for no help from the medical profession, either locally or nationally. The *Record* reports that thirty-seven cases were brought up with thirty-five convictions. (Jour. A. M. A., March 14, 1931, p. 883).

Book Announcements

New and Nonofficial Remedies, 1931, containing descriptions of the articles standing accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1931. Cloth. Price, postpaid, $1.50. Pp. 481 + LVI. Chicago: American Medical Association, 1931.

This volume is the annual publication of the Council on Pharmacy and Chemistry of the American Medical Association giving the latest authentic information concerning those of the newer medicinal preparations found worthy of the consideration and use of the medical profession. Each year the Council scans the general articles under which the various preparations are classified and revises these to conform to the latest and best medical thought. Important revisions have been made in a number of the general articles and in the description of various preparations.

New and Nonofficial Remedies should be in the hands of all who prescribe drugs. The book contains information about the newer materia medica which cannot be found in any other publication.

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1930. Cloth. Price, $1.00. Pp. 91. Chicago: American Medical Association. 1931.

This book is essentially a record of the negative actions of the Council on Pharmacy and Chemistry of the American Medical Association; that is, it sets forth the findings concerning medicinal preparations which the Council has voted to be unacceptable for recognition and use by the medical profession. Many of the reports record outright rejection or the rescinding of previous acceptances; others report in a preliminary way on products which appear to have promise but are not yet sufficiently tested or controlled to be ready for general use by the profession.

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Editorial

Appendicitis in Children.

Practitioners are often "put to it" to make a diagnosis in children with pain in the abdomen. Abdominal pain in the child or infant is often treated by the mother with purgatives; often the condition is treated with paregoric; the attack of pain is often overlooked or given scant consideration. If the doctor is called, the diagnosis may be made difficult by an irritable or frightened child, by difficulty in getting a satisfactory history, by remoteness of laboratory facilities, such as blood count and urinary examinations to help in arriving at differentiation between acute pyelitis, upper respiratory infection, urinary calculi, and ordinary food poison with intestinal upset.

In view of these things, one may read with interest comments and experiences on this subject, based upon a study of one hundred and eleven cases of appendicitis coming to operation, as brought out by Tasche (*A. J. M. Sc.*, July, 1931, page 87). In the practice of the physician in the home, the diagnosis of the cause of abdominal pain becomes urgent. It is a question often that arises at the most inopportune time, often after midnight, often on holidays or Sundays, when laboratory assistance is difficult to command. For this and other obvious reasons, it is not unwise to note the published consideration of this subject by Dr. Tasche.

In general, it has become accepted that appendicitis occurs in the infant relatively rarely. All these children were under thirteen years of age. The youngest was an infant of two years and seven months, and one two years and ten months. Both had acute suppurative appendicitis and both recovered after operation. Of this group of 111 cases, only 2.6 per cent were under five years. The sexes were equally affected in the group. It was noted that the seasonal incidence favored the greatest number in the fall and the next in the summer months. While the association of recent respiratory infection, contagious disease, or gastro-intestinal disorder was noted, it was difficult to prove in the histories; however, these were observed to be suggestively frequent. It was found to be positively imperative, in the matter of diagnosis, to have a complete physical examination in order to differentiate tonsillitis, pneumonia, pyelitis, and other conditions simulating acute appendicitis in childhood.

In classifying such cases, Tasche arranged his cases under five groups.

There was the recurrent appendicitis. In twenty-nine of his cases there were previous attacks of right-sided pain. These operations were done in the interval period. Clinically, the attacks were mild in type. Microscopic scrutiny of the twenty-nine appendices showed inflammatory changes in nine cases, suppura-

tion in two, and no inflammation in eighteen. Thus eighteen operations were apparently not justified by the laboratory reports, although there had been pain in the right side with other clinical signs of the disease.

There was acute suppurative appendicitis showing a figure of thirteen cases in the group. There were no deaths following these operations. Clinically, three cases were considered to be mild, eight moderately severe, and two severe. Of the thirteen appendices, ten showed suppuration under microscopic examination, but three were only slightly inflamed. The average leucocyte count in this group of thirteen was 13,000, with an average polymorphonuclear percentage of 84.

There was a group of acute suppurative appendicitis with local peritonitis. There were twenty-five of this type of cases operated upon and one died. The average leucocyte count was 17,000, with an average polymorphonuclear percentage of 83. Clinically, before operation seventeen were considered moderately severe and. seven severe cases. One was thought to be mild. Microscopic examination showed all of these appendices as suppurating and eleven had a temperature of 101° to 102° F.

There was a group of acute suppurative appendicitis with abscess formation. In this group there were thirty-three cases. At operation, all abscesses, whether localized around the appendix, or remotely situated (as pelvic, subdiaphragmatic, sub-hepatic, or elsewhere), were included in this group. Time of the operation as related to the onset of the clinical symptoms was not declared, but the average white cell count in this group was 21,000, with an average polymorphonuclear count of 88 per cent, and the types of symptoms were classified by designating one mild, twelve moderately severe, and three as very severe or moribund. The pulse rates were noted as being higher than was warranted by the degree of temperature.

Finally, there was a group of these cases denominated acute suppurative appendicitis with diffuse peritonitis. In the group there were eleven cases. Three of the eleven, or 28 per cent, died. At operation, all the appendices showed suppuration and in all there was diffuse peritonitis. There was an average leucocyte count of 21,000, with 81 per cent polymorphonuclears. Temperature was more than 100° F. in some; in five it was 103° F. or over. The pulse rate was increased, but in two only was it markedly so. The operation was performed and had for its purpose the removal of the appendix and drainage of the abdomen with numerous soft rubber tissue drains of the Penrose type.

This review of the experiences of a surgeon in 111 cases of appendicitis furnishes an opportunity to present this subject to our readers. In the daily practice of the physician, abdominal pain in the child presents perplexing problems and responsibilities that weigh on the mind of the medical attendant. Any and frequent considerations of these questions, as depicted by the publications of responsible observers, can but be an aid to the practitioner as he attempts to do the "right" thing at the bedside. "To err is human," and to "err on the right side" is an adage, but to be "right" as often as possible, erring neither on the right nor the wrong side, is the aim of every right-thinking medical attendant. To attain that state of accuracy in diagnosis of a child's abdomen means renewed and repeated study of the subject.

A careful perusal of the data contained in the bibliography supporting the article presented by Dr. Tasche, as well as the subject matter of the paper, offers our readers, who wish to review this important subject, an unusually favorable chance to do so.

Iron and Copper in Anemic Children.

Any work in therapeutics that points toward improvement of the anemic child must hearten the general practitioner. Probably few clinical conditions arrest the attention of the practitioner in the household as does the pallid child. Such cases necessarily require a thorough clinical examination. This should be done in the most complete way. But, often in the history of the patient, or in the ordinary physical examination of the "stripped" child, even before laboratory aids are brought to bear on the study of the case, are found the primary factors that have brought about the anemic condition. It goes without saying that these and all causes of the anemia should be removed so far as possible. Often, this step alone in the management of such cases is enough to establish a reasonably rapid return to normal blood values. This is particularly true when the child is placed in salubrious and wholesome surroundings. There are, however, conditions of prac-

tice when medical measures need to be applied in order to bring about speedy improvement or to reach a state of normal health within a reasonable time. The use of iron in anemia has been of long standing and copper has had its place in medicine. For the past two decades, however, the popularity of these hematinics has been much on the wane, due to the more or less unfavorable comments on the part of research workers and due to the general trend of the times toward therapeutic skepticism in the use of remedies of this nature.

A recent paper by Lewis,* in its opening paragraph, indicates a series of observations that have been reported, touching upon the action of iron and copper in the regeneration of hemoglobin. Lewis cites the observations of Hart, Steenbach, Waddell and Elvehiem (Iron in Nutrition; VII, Copper as a Supplement for Hemoglobin Building in the Rat, *Journal Biological Chemistry*, May, 1928). He gives the work of McHargue, Healy and Hill, in the same publication, which goes to show that copper has an important function in the formation of hemoglobin. The work of these and other research workers served as the basis for the use of iron and copper in the treatment of anemia in children. Lewis undertook such an inquiry soon after this announcement.

Lewis made a study of thirty-four children with secondary anemia. All were observed for at least three weeks before the treatment by iron and copper was started. The hemoglobin and red blood cells were determined. The ages of the children varied from six months to seven years. During the clinical observation, hemoglobin and red cell counts were made each week. The changes were noted during iron administration alone and then during iron and copper in association. These thirty-four cases were observed from one month to three months before treatment was begun.

Clinical improvement was gradual in all cases; there was an increase in appetite and general well being and a gain in weight. The red blood cells increased promptly. In some, says Lewis, a level of 4,500,000 per cubic millimeter was attained within a month. Hemoglobin rose less rapidly but it increased. The case that suffered from infection exhibited a slower rate of regeneration, particularly one who had tuberculosis of the hip. This one showed no improvement after fourteen weeks of treatment with iron, copper and blood transfusion. But all anemic patients in the nutritional group showed prompt and definite improvement.

In these investigations, the author used saccharated ferrous carbonate in amounts varying from 15 to 60 grains (0.1 to 4 Gm.) daily, and copper sulphate, 0.5 per cent solution, giving from one to two tablespoonsful three times a day.

Diabetes and Operations.

Diabetes has always been a deterrent, more or less, to surgical operations. Rightly so, because diabetics have been recognized as poor surgical risks. Often in the past, emergency operations, operations that appeared to be imperative, were deferred or given up because of the established conviction that to operate would be to bring more immediate and fatal termination. Such advanced or severe diabetics suffered the hardship of the pre-insulin era in medicine when it was not known that patients, even with severe diabetes, might be much improved by proper administration of insulin and dietary management. It is now with a sense of greater confidence that surgical operations may be undertaken on the diabetic. Pathology of the complications of chronic diabetes not infrequently calls for the intervention of surgery. Acute surgical maladies may arise in chronic diabetes. Acute infections may easily occur in the diabetic and take on a rapid and malignant course demanding surgical treatment. All such patients in these days, with the instant and skilful aid of internal medicine, that administers insulin and dietary treatment for a proper period of time in anticipation of reaching the best state for operation, have a much better chance for recovery than at any time in the history of medical and surgical practice.

Again, surgical practice may secure for itself a high percentage of successful operations, as the presence of the latent or mild case of diabetes is recognized and treated prior to the operation. It is an accepted course of action in the hands of prudent men that every case of diabetes is potentially a grave surgical risk. No effort should be wanting in the study of surgical patients to detect and treat the mild, transient, or latent diabetic prior to operation. Acute infections and chronic pathology both,

*Jour. A. M. A., April 4, 1931, page 1135.

in the mild diabetic, take on a graver aspect than in non-diabetics.

One has only to review mentally the pathogenesis and metabolic status of the diabetic body to appreciate the importance of the plea to lay careful hands upon the diabetic, whether mild or severe. One has much likewise to reassure him as the knowledge of insulin and dietary medication of this disease through the past ten years is remembered and appreciated.

President's Message

High Lights of Annual Meeting, and Other Items of Information About the Roanoke Meeting, October 6th, 7th, and 8th.

1. A preliminary program will be presented in the September issue of the MONTHLY.

2. A special Program will be sent each member in advance of the meeting.

3. Dr. Russell L. Cecil, of New York, will deliver the Annual Address on Medicine, on Tuesday night, October 6th.

4. The Symposium on Mental Hygiene will be opened on Wednesday morning by an eminent Author and Clinician, and will be discussed by authoritative leaders in Neurology and Psychiatry, who will stress its importance in the practice of Medicine and Surgery.

5. On Wednesday night, October 7th, the new Health Commissioner of Virginia will be formally introduced to the profession, and brief reports of what has been accomplished by some of the special Committees of the Society will be made.

6. Most of Wednesday and Thursday, the 7th and 8th, will be devoted to scientific papers by members.

7. Part of Thursday's meeting (afternoon session) will be held at Catawba Sanatorium, when papers on Tuberculosis will be read, and cases demonstrated.

8. Lunch on Thursday will also be served at the Sanatorium.

9. After the night Sessions of Tuesday and Wednesday, the local profession of Roanoke will entertain the visiting physicians.

10. On Tuesday afternoon, October 6th, the local Medical Faculty of Roanoke will hold a clinical meeting, at which visiting and local distinguished clinicians will lecture upon and demonstrate cases of Arthritis and Rheumatism, Pneumonia, etc., and also lecture and demonstrate cases of Obstetrics, Gynecology, and Diseases of Children.

This promises to be a most instructive and unusual clinical session, and any member of the Society desiring to have consultation in regard to any personal patient is invited to confer with the General Chairman of Arrangements, Dr. W. L. Powell, Roanoke, Va., in advance.

11. The Woman's Auxiliary to the State Society, aided by the local Committee of Ladies, is preparing a most interesting program for their sessions, and invites the women of all doctors' families to attend.

12. The Roanoke physicians, likewise, most cordially invite every member of the Society to attend this Annual Meeting in "the Queen City of the Southwest."

In our opinion, the Program Committee and the Roanoke physicians, have prepared for us an unusually attractive and varied Program, and it is hoped that there will be a very large attendance.

J. ALLISON HODGES, M. D.,
President, Medical Society of Virginia.

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

Education of Physicians.

It is well at this time to check up, as it were, on the work of this Department. How far have we gone? How much interest has been shown? How much progress has been made? What have we learned by our clinical meetings? There is quite a diversity of opinion as to whether the mixed clinic or one confined

to a single subject or disease is most advantageous and popular.

We have had some very successful clinical meetings in which the subject has been obstetrics, or cancer, or tuberculosis, or mental diseases, etc. One of our very prominent coworkers, who is also a teacher, thinks this is the best kind of clinical meeting and will with the proper management become the most popular and informing; on the other hand, a diversity of subjects is perhaps most likely to attract the general practitioner who often feels that he has gained more when learning even a little about a number of subjects, rather than concentrating on one subject. There has also been a difference of opinion as to whether it is best to have as leaders in the clinical meetings resident practitioners or prominent teachers and clinicians from a distance. The choice has been left to the officers of the local societies, and doubtless for the present that policy should be continued.

It is stimulating and encouraging to know that there is a real and increasing interest in this continued education of physicians.

There is this also to be said. These meetings throughout the State are serving to bring the men of the Medical Society of Virginia in closer personal touch with each other, and this will necessarily strengthen and build up the State Society. We are hoping this will result in a larger attendance at our State Society meetings and a greater number of clinical meetings throughout the coming year in each of the Districts.

I have before me a copy of an address* delivered by Dr. Greer Baughman, of Richmond, at the University of Virginia Institute of Public Affairs, July the 1st, in which he discusses the education of the doctors of Virginia from the earliest times. I am using here the last part of his intructive article because of its timely appropriateness. Dr. Baughman, after a quite careful review of the education and preparation of doctors from the earliest days of the English settlements in this country, continues in concluding—

"From this brief survey of the education of the doctor from the establishment of the first permanent settlement at Jamestown in 1607 and a record of those that left a sufficient impression upon their times to have their names recorded, we must conclude that education is the most important element in their success.

"Granting that the native ability of the doctors of the seventeenth century was as great as in subsequent times we note with sorrow that the great majority of them were without honor in their community and we attribute it to a lack of education. In proportion as educational opportunities presented themselves and were grasped the doctor advanced in society. Those that really made a name for themselves almost without exception did post-graduate work.

"Medicine in this day is making such enormous strides that a doctor who does not read, consult with his colleagues, attend medical meetings, and make contact with teaching centers is hopelessly lost.

"So much is this true that the cities are becoming overrun with doctors and the country is being depleted. The reason is perfectly obvious—the better men want to touch elbows with progressive medicine and they believe they can make better living in the cities.

"The medical profession can very easily return to the conditions of the seventeenth century in Virginia if the doctor will continue to practice with the knowledge that he had when he got his diploma. The public will then diagnose and treat their own diseases with the aid of popular up to date medical books.

"From the standpoint of education there are two groups in the medical profession—a kynetic group that demand more instruction, more clinics, more opportunities for advancement than we can give them and the potential group that are perfectly contented and even resent an attempt to activate them. These two groups are to be found in the cities and towns as well as the country.

"The department of education of the Medical Society of Virginia has done a splendid piece of work for education in fostering regional clinical conferences over the State. No one could be offended if Dr. J. Allison Hodges were singled out for praise because of interest in this work.

"The sort of education that the doctor needs after he has left college might be designated as acute and chronic. The chronic is that general medical information both scientific and practical that will bring him up to date. The acute is that which is needed at once to save lives.

*This address will appear in full in the September issue of the Monthly.

"A certain part of the acute education the Board of Health most ably attends to. The Board of Health attends to education about the communicable diseases in the interest of the public as a whole. Those troubles that belong to the individual and cannot be given to anyone else are particular problems for the doctor. Just at present two problems which must be solved by the dotcors are the high obstetrical and cancer mortality.

"One-third of the women who die as a result of pregnancy or childbirth can be saved if they contact a doctor who in turn examines them properly and treats them the right way. Contact with a doctor who can recognize cancer early enough and will recommend an operation will save most cases. Contact with a trained doctor is the answer in both cases.

"A joint committee made up of equal representation from the University of Virginia, Medical Society of Virginia, and the Medical College of Virginia have decided that in the case of the obstetrical and cancer problem an emergency exists and have recommended that the situation be met with a different plan than that set up for general post-graduate instruction with regional post-graduate conferences, etc.

"They have recommended that a doctor be employed and be sent with whatever help he may need to the doctors individually or in groups in order to instruct the ones that need instruction in prenatal care and in office gynecology. This doctor will have to be a diplomat; above all he must be not a practicing physician. He must devote his whole time to instruction and not be connected with any clinic or hospital.

"In this way we may be able to save many lives and to open a new means of livelihood for the doctor."

I. C. Harrison, M. D.,
President-Elect and Chairman, Department of Clinical Education.

Information

All members of the Medical Society of Virginia are requested to write for any information desired on any subject relative to these Extension Courses in Graduate Medical Education, either to the Executive Secretary, Mr. George W. Entsler, P. O. Box 707, University, Va., or to the Chairman of the Department.

Proceedings of Societies

Virginia State Board of Medical Examiners.

Of the ninety-seven applicants who came up for examination to practice medicine in Virginia, at its June, 1931, session, ninety-six were successful. Sixteen doctors were granted certificates by reciprocity and one chiropodist was admitted to practice in Virginia. It is stated that the grades made by the applicants were exceptionally good and the examiners commented upon the splendid appearance of the applicants as a group.

Following is a list of applicants who successfully passed the Board in June:

Dr. Thomas L. Allman, U. S. Naval Hospital, Brooklyn, N. Y.
Dr. John J. Ambler, Richmond, Va.
Dr. Harold Irvin Amory, Richmond, Va.
Dr. Dewey L. Anderson, Charlottesville, Va.
Dr. Drury B. Armistead, Richmond, Va.
Dr. Harloe Bailey, Saltville, Va.
Dr. Tyler. R. Boling, Jr., Burke's Garden, Va.
Dr. Hugh Benton Brown, Jr., Emory, Va.
Dr. Wm. A. Brown, University, Va.
Dr. Robert C. Bunts, Pulaski, Va.
Dr. Paul J. Bundy, Lebanon, Va.
Dr. R. D. Butterworth, Butterworth, Va.
Dr. Charles C. Canada, Grottoes, Va.
Dr. Edward G. Cannon, Richmond, Va.
Dr. Julius Caplan, Portsmouth, Va.
Dr. G. D. Capaccio, University, Va.
Dr. O. W. Carper, New Castle, Va.
Dr. William M. Chew, University, Va.
Dr. Leslie B Copenhaver, Bristol, Va.
Dr. Meyer Cohen, Richmond, Va.
Dr. Frank P. Coleman, Richmond, Va.
Dr. W. M. Cornell, Atlanta, Ga.
Dr. J. B. Cousar, Waynesboro, Va
Dr. R. B. Cralle, Jr., Richmond, Va.
Dr. Oscar W. Cranz, Richmond, Va.
Dr. Walter E. Daniel, Jr, Weldon, N. C.
Dr. Fred G. DeBusk, Saltville, Va.
Dr. D. A. Dent, Richmond, Va.
Dr. Paul L. Dent, Richmond, Va.
Dr. John Newton Dunn, Richmond, Va.
Dr. Grant R. Elliott, Richmond, Va.
Dr. Bob L. Field, Norfolk, Va.
Dr. Carlyle G. Flake, Richmond, Va.
Dr. Dominick J. Foglia, Norfolk, Va.
Dr Wm. B. Fuqua, Jr., Radford, Va.
Dr. Samuel H. Garst, University, Va.
Dr. George Gay, III, Richmond, Va.
Dr. Isaac K. Givens, Norfolk, Va.
Dr. Robert E. Glendy, University, Va
Dr. Meyer H. Goldstein, University, Va.
Dr. James A. Gooch, Richmond, Va.

Dr. Samuel B. Grims, University, Va.
Dr. W. H. Hall, University, Va.
Dr. Ruth Schwarz Hart, Winter Park, Fla.
Dr. S. S. Hamilton, Jr., Richmond, Va.
Dr. Ira L. Hancock, Jr., Richmond, Va.
Dr. Frank W. Hewlett, Richmond, Va.
Dr. Angus Hinson, University, Va.
Dr. Wm. Hume Hoskins, Dunnsville, Va.
Dr. Joseph W. Houch, Harrisonburg, Va.
Dr. Edward D. Hudson, Lahore, Va.
Dr. Harry Gilman Hudnall, Covington, Va
Dr John Thomas James, Galax, Va.
Dr. John B. James, Richmond, Va.
Dr. Cyril James C. Kennedy, Richmond, Va.
Dr. Otis Gardner King, Arcola, N. C.
Dr. C. F. Kincheloe, Jr., East Falls Church, Va
Dr. C. W. LaFratta, Richmond, Va.
Dr. James C. LeFon, Glen Allen, Va.
Dr. Hermann J. Lukeman, Saltville, Va
Dr. Edward H. Major, Wilkes-Barre, Pa.
Dr. Edward M. Mann, Elizabeth City, N. C.
Dr. Herman E. Martin, Richmond, Va.
Dr. Arthur Mazyck, Jr., University, Va.
Dr. Jesse McCall, Tazewell, Va.
Dr Thomas P. McKee, Saltville, Va.
Dr. L. S. Meriwether, University, Va.
Dr. H. W. Miller, Richmond, Va.
Dr. Tom H. Mitchell, Richmond, Va.
Dr. Charles O. Moody, Norfolk, Va.
Dr. Margaret E. Moriarty, University, Va.
Dr. J. C. Neale, Jr., Dumbarton, Va.
Dr. Wm. King Newton, Fountain, N. C.
Dr. Joseph W. Owen, Richmond, Va.
Dr. Thomas E. Painter, Pulaski, Va.
Dr. Wm. H. Parker, University, Va
Dr. Thomas B. Payne, Fredericksburg, Va.
Dr. J. M. Preston, IV, Winston-Salem, N. C.
Dr. Edward C. Rawls, Richmond, Va
Dr. Fred T. Renick, Richmond, Va.
Dr. Wyatt E. Roye, Richmond, Va.
Dr. George H. Salomonsky, Norfolk, Va.
Dr. Adolph S. Sanchez, Richmond, Va.
Dr. John H. Scherer, University, Va.
Dr. Asa E. Seeds, Waverly, Va.
Dr. Eldridge C Simmons, Petersburg, Va.
Dr. Henry C. Spalding, Richmond, Va
Dr. Jack Spencer, Lynchburg, Va.
Dr. Ben Steingold, Berkley, Va.
Dr. A. C. Stutsman, Baltimore, Md.
Dr. Wm. G. Talmage, Petersburg, Va
Dr. W. L. Thomas, Jr., University, Va.
Dr. C. R. Titus, Richmond, Va.
Dr. D E. Watkins, Jr., Fork Union, Va.
Dr. Bliss K. Weems, University, Va.
Dr. W. M. Whitehead, Lovingston, Va.

The James City—New Kent Medical Society

Held its regular meeting at Dr. J. M. Henderson's cottage, on the York River, on July 2nd. The meeting was called to order by the president, Dr. A. M. Sneed, of Toano, and the minutes presented by the secretary, Dr. J. R. Tucker, of Williamsburg, were approved. Dr. J. R. Parker, Providence Forge, was elected delegate to the State Society meeting, at Roanoke, in October, and Dr. J. R. Tucker alternate. Dr. Sneed was appointed to write a formal letter to all the county societies, urging them to discuss at the State meeting the colored insurance blanks, which have become such a nuisance to the doctor, and have some standard form blanks adopted whereby the individual may obtain his insurance without the doctor having to visit his home each time.

Previous to the meeting there was a most enjoyable fishing trip, for which Dr. Henderson was host.

The Fauquier County Medical Society

Was entertained by Dr. Wade C. Payne, president of the society, at his residence in Haymarket, Va., on June 25th. Dr. Payne, in calling the meeting to order, made a very impressive speech of welcome, in which he covered the progress made by the society and the relation that exists between all its members. He urged their attendance at the meeting of the State Society in Roanoke. Dr. John A. Gibson, of Leesburg, Va., spoke on "Midwives in Loudoun County," giving many statistics and how the situation was being handled by the State Board of Health. This talk was discussed by several members. Dr. Richard Mason reported several very interesting obstetrical cases. Dr. W. G. Trow read a very humorous paper on measles. After the businsss, an excellent supper was served by Dr. and Mrs. Payne.

Dr. J. R. Allen is secretary and Dr. M. B. Hiden assistant secretary of this society.

News Notes

Our New State Health Commissioner.

Dr. Warren F. Draper, appointed State Health Commissioner of Virginia, to succeed the late Dr. Ennion G. Williams, entered upon his duties at headquarters in Richmond, on the morning of July 16th. Dr. Draper is assistant surgeon general of the U. S. Public Health Service. He was appointed to his new position by Governor Pollard and serves on assignment from the Federal Service, which permits him to retain rank and privileges attained during his twenty-one years with the

government. His appointment at this time is to fill the unexpired term of Dr. Williams, terminating July 1, 1932.

While a native of Massachusetts and a graduate of the Harvard University Medical School, Dr. Draper has been a resident of Virginia for the past seventeen years and has made his home at Cherrydale, in Arlington County. His work with the Federal government has brought him in frequent and intimate contact with most of the officials of the Virginia State Health Department.

We welcome Dr. Draper to this new position and stand ready to assist him in the furtherance of his work in preventive medicine in our State.

Keep This Date in Mind!

As time flies so, it is well now to mark the dates of October 6th, 7th and 8th on your calendar for the meeting of the Medical Society of Virginia in Roanoke. Don't fail to make hotel reservations early.

The local doctors are making plans for attractive entertaining and clinics. The president, Dr. J. Allison Hodges, and the Program Committee are arranging an excellent scientific program. Members interested in presenting papers at this meeting should send their titles with short abstracts to the Society's offices at 104½ West Grace Street, Richmond, *by August 10th.*

"Mental Hygiene" is the subject which has been selected for the symposium and this should be of especial interest to general practitioners as it is to deal largely with prevention of mental diseases.

Hospitals, medical organizations, colleges and individuals wishing to have scientific exhibits, should communicate at once with Dr. C. Bruce Morton, University, Va., chairman of the Committee on Scientific Work and Clinics.

There will be plenty of diversion for the ladies as well as the men, so all doctors are urged to bring the ladies in their families with them.

For those who golf, there will be a golf tournament on Tuesday, October 6th, at 10 A. M., at the Roanoke Country Club. All players participating in the tournament will be required to have their own clubs furnish them their handicaps by letter or they will be barred from tournament play. Prizes will be awarded by the Roanoke Academy of Medicine to the player making the low gross score and the low net, for keeps. There will also be a booby prize for the player who has the greatest number of alibis. Luncheon will be served to the participants of the tournament and a good time will be had by all.

For the information of delegates and alternates from the local societies, it is well to state that much important business will be transacted in the first meeting of that body to be held on Tuesday afternoon at 2:30. The clinics will also be held that afternoon and, with an invited speaker on the program that evening, the first day should be one of the important days.

Attention is also called to the fact that there will be a luncheon for members at Catawba Sanatorium on Thursday, following which there will be some interesting papers, so come prepared to stay Tuesday, Wednesday and Thursday.

Married.

Dr. Warren Stone Bickham, formerly of New York but for the past three years of Richmond, Va., and Miss Alice Martin, of Brooklyn, N. Y., June 30th.

Dr. John R. Hamilton, Nassawadox, Va., and Miss Gladys Lee, Richmond, Va., June 10th.

Dr. William Carey Henderson, also of Nassawadox, Va., and Miss Mary Ferebee, Eastville, Va., June 27th.

Dr. C. Eugene Perkins and Miss Eleanor Maxwell, both of Philadelphia, Pa., June 28, 1930. Dr. Perkins is an alumnus of the Medical College of Virginia, Richmond, in the class of '23 and has made his home in Philadelphia for several years.

Dr. Marshall Peterson Gordon, Jr., of the class of '27, University of Virginia but now connected with Johns Hopkins Hospital staff, Baltimore, and Miss Gladys Campbell, Saltville, Va., July 9th.

Dr. John Thomas James, of this year's class, University of Virginia, and Miss Mary Bryant, of Marion, Va., June 25th. They are now in Des Moines, Iowa, where Dr. James has accepted an appointment as interne at the Iowa Methodist Hospital.

Dr. James Clarence LeFon, of the class of '31, Medical College of Virginia, and Miss Katheryn Elizabeth Schooles, Glen Allen, Va., June 20th. Dr. LeFon will be a member of

the resident staff at Protestant Hospital, Norfolk, Va., for the coming year.

Dr. John Howard Childrey, Rochester, Minn., of the class of '26, Medical College of Virginia, and Miss Corra Hanrahan, of Geneva, N. Y., June 23rd.

Dr. Samuel Byron Pope, Jr., of the class of '30, recently interning at the Protestant Hospital, Norfolk, Va., and Miss Emma Lucille Ryerson, Richmond, Va., June 24th. They are now at home in Glen Cove, L. I., where Dr. Pope is a resident in the North Country Community Hospital.

Dr. Llewellyn Lee Ashburn, Marine Hospital, New York, and Miss Serena Dryden, Crisfield, Md., July 14th. Dr. Ashburn graduated from Medical College of Virginia, Richmond, in 1930, and at once entered the U. S. Public Health Service as an assistant surgeon. He served his internship at the Marine Hospital, Norfolk, Va.

Dr. Richard Moncure Reynolds, Norfolk, Va., and Miss Margaret Elizabeth Sheppard, Richmond, Va., in June. Dr. Reynolds graduated from the Medical College of Virginia, Richmond, in 1929, and interned at St. Vincent's Hospital, Norfolk, before entering private practice in that city.

Dr. William Price Bittinger, Summerlee, W. Va., and Miss Susannah Brient, Englewood, Tenn., May 27th. Dr. Bittinger is an alumnus of the Medical College of Virginia.

Dr. Toson O. Summers

An alumnus of the Medical College of Virginia but now a surgeon in the U. S. Navy, with the rank of Lieutenant Commander, has just been transferred from St. Thomas, Virgin Islands, where he was the chief municipal physician at the U. S. Naval Hospital, to the U. S. Naval Hospital, at Brooklyn, N. Y. He visited relatives in and near Richmond, Va., his former home, en route to his new post.

The *Saint Thomas Mail Notes*, published in the Virgin Islands, was most complimentary of the work done by Dr. Summers during his stay in the Virgin Islands. The paper states that Dr. Summers had won a big reputation as an eye, ear, nose and throat specialist in their midst and had won the appreciation of the people of St. Thomas. It further says that "Dr. Summers is a true representative of the type of doctors who have made the medical service of the American Navy famous and his departure surely will be felt."

News Notes from the Duke University School of Medicine and Duke Hospital.

The following appointments, effective July 1st, were made to the faculty: Dr. Bayard Carter, Professor of Obstetrics and Gynecology, and Dr. Edwin C. Hamblen, Associate Professor of Obstetrics and Gynecology.

In addition to the above, there were added to the staff one resident, two assistant residents, nine internes and one Fellow.

July 20th marked the close of the hospital's first year of operation. During that time 3,417 patients were admitted to the hospital, 1,439 operations were performed and approximately 2,972 patients were treated in the Out-Patient Clinic.

On July 20th and 21st, Dr. Wilburt C. Davison, Dr. Alfred R. Shands, Jr., and Dr. Bayard Carter attended the Southern Pediatric Seminar, at Saluda, N. C., at which they gave lectures.

Dr. Thomas N. Spessard,

Of the class of '27, Medical College of Virginia, after spending two years at the Neurological Institute of New York, studying in neurology and neuro-surgery, has located in Roanoke, Va., with offices in the Medical Arts Building. He is limiting his practice to neurology and neuro-surgery.

Dr. Charles Bagley, Jr.,

Baltimore, Md., was elected president of the Society of Neurological Surgeons at its meeting in Richmond, Va., in June.

The American College of Physicians

Will hold its Sixteenth Annual Clinical Session at San Francisco with headquarters at the Palace Hotel, April 4-8, 1932. Following the Clinical Session, a large percentage of the attendants will proceed to Los Angeles where a program principally of entertainment will be furnished April 9th, 10th and 11th.

Announcement of the dates is made particularly with a view not only of apprising physicians generally of the meeting, but also to prevent conflicting dates with other societies that are now arranging their 1932 meetings.

Dr. S. Marx White, of Minneapolis, is President of the American College of Physicians, and will arrange the Program of General Sessions. Dr. William J. Kerr, Professor of Medicine at the University of California Medical School, San Francisco, is General Chairman of local arrangements, and will be in charge of the Program of Clinics. Dr. Francis M.

Pottenger, of Monrovia, is President-Elect of the College, and will be in charge of the arrangements at Los Angeles. Mr. E. R. Loveland, Executive Secretary, 133-135 S. 36th Street, Philadelphia, Pa., is in charge of general and business arrangements, and may be addressed concerning any feature of the forthcoming Session.

Return From Medical Field Service School.

The following Virginia doctors were among the Medical Reserve Officers in training at Carlisle Barracks, Pa., from July 5th to 18th: Lt. Col. Charles M. Edwards and Lt. Col. Wm. Robt. Weisiger, both of Richmond; 1st Lt. Leslie B. Copenhaver, Bristol, Va., but now at Memorial Hospital, Richmond; 1st Lt. Jacob C. Harshbarger, Harrisonburg; 1st Lt. Joseph M. Moore, Petersburg; 1st Lt. Elmer R. Moorman, Roanoke; 1st Lt. Leslie E. Morrissett, Richmond; 1st Lt. Davis W. Ritter, Winchester, and 1st Lt. Delbert T. Saffer, Middleburg.

Dr. Bruce Clark,

After a year spent at Hiwasse, Va., has returned to his former home, at Winifrede, W. Va.

Winners in Virginia Sanitation Campaign.

Prince George won the first prize in the three year Sanitation Campaign which ended on June 1st. Powhatan County came second and Hanover County third. In each county some organization or group of organizations assumed responsibility for the campaign. In Prince George County it was the Federation of Community Leagues, in Powhatan County it was the Home Demonstration Clubs and in Hanover County it was the Federation of Community Leagues. Factors in the campaign were sewage disposal, safe water, adequate screening, and fly control.

Prince George County which won the first prize, $500, has approximately 2,281 homes and 91 per cent of these homes was convassed by workers for the Federation. The final score for Prince George County was 65.21 out of a possible 100 per cent.

Powhatan County which won the second prize, $300, has about 1,365 homes, 88 per cent of which were reached and the final percentage of secured sanitation was 64.98.

The third prize, $200, went to Hanover County which has more homes than the other two counties combined, very nearly 3,800, and about 75 per cent of these homes were visited by the Federation. The percentage score of Hanover was 46.45.

It was said at the Health Department that there was not much difference between the leaders and Princess Anne County and King William County which came in fourth and fifth. It was also said that Charlotte, Loudoun, Mecklenburg and Charles City, the next in order, made excellent showings.

Dr. James S. Richardson,

Recently at Hurley, Va., has located at Grundy, Va. Dr. Richardson is a member of the class of '29, Medical College of Virginia.

Dr. Ezekiel Promoted.

Dr. G. A. Ezekiel, of Richmond, Va., has been promoted from the rank of Lieutenant Colonel to that of Colonel in the Medical Reserve Corps of the U. S. Army, effective June 25th. Dr. Ezekiel served in the Medical Corps in France during the World War.

Dr. Archer A. Wilson

Has just opened offices in Professional Building, Charleston, W. Va., for the practice of neurology and neurological surgery, having just completed a two years' appointment as resident in neuro-surgery at Medical College of Virginia, Hospital Division, Richmond. During his study in Richmond, he took several months of special work at the Boston City Hospital, Boston, Mass. Dr. Wilson graduated from the Medical College of Virginia in 1923, and was engaged in general practice in West Virginia for five years before entering this specialty.

The American Public Health Association

Will hold its sixtieth annual meeting in Montreal, Quebec, September 14th-17th, with headquarters at the Windsor Hotel. Information about this meeting may be obtained from headquarters of the Association, at 450 Seventh Avenue, New York City.

Dr. Allen H. Moore,

Doylestown, Pa., who formerly practiced at Clover, Va., and then for five years at New Market, Va., sailed on July 4th for London, where he planned to do some work in Internal Medicine. Later he will continue this work in Paris.

Dr. Moore was recently elected president of the Optimist Club International and has also been made editor of the *Bucks County (Pa.) Medical Bulletin.*

Dr. W. P. Wheless,

Recently at the Children's Hospital of Michigan, Detroit, has located for practice at Spring Hope, N. C.

Dr. Charles Phillips,

After a service at the Medical College of Virginia from 1924 to 1931, recently resigned as professor of pathology there, to become Director of Laboratories at the Scott & White Clinic, Temple, Texas. He entered upon his duties on July 1st.

Dr. W. E. Jennings,

Danville, Va., returned the first of July from New York, after doing post-graduate work on Asthma and Hay Fever at the Cornell University Medical College, under Drs. Arthur F. Coca and Robt. A. Cooke.

Interstate Post-Graduate Medical Association of North America.

The program of the meeting of this Association, to be held at Milwaukee, Wis., October 19th-23rd, will include speakers of international prominence. The branches to be considered are: Surgery, orthopedics, medicine, urology, neurology and psychiatry, oto-rhino-laryngology, ophthalmology, dermatology, radiology, pediatrics, and obstetrics and gynecology. Every practicing physician can find something to his liking.

The officers this year are: President, Dr. Henry A. Christian, Boston, Mass.; secretary, Dr. Edwin Henes, Jr., Milwaukee, Wis.; managing director, Dr. Wm. B. Peck, Freeport, Ill., and chairman of the Program Committee, Dr. George W. Crile, Cleveland, O.

Dr. Ramon D. Garcin, Jr.,

Formerly of Richmond, Va., and a member of the class of '29, Medical College of Virginia, after a service at Cumberland Street Hospital, Brooklyn, N. Y., has opened offices for the practice of internal medicine at 215 Sterling Street, corner Rogers Avenue, Brooklyn.

Dr. S. G. Miller,

Recently at Warm Springs, Va., announces his removal to Piney River, Va.

Dr. B. A. Rice,

Forest, Va., returned home in July, after a tour of several weeks in Europe.

Argentina's Child-Welfare Congress.

The first national congress on social service for childen in Argentina will be held in Buenos Aires September 20 to 26, 1931, under the auspices of the National Council of Women of Argentina. Among the topics for discussion in addition to general child-welfare problems will be the training of social workers and the establishment of a council of social agencies and a social-service exchange in Buenos Aires. The president of the National department of hygiene, Dr. G. Araoz Alfaro, will preside at the congress.

American Surgical Association.

Dr. Charles H. Mayo, Rochester, Minn., was elected president of this Association at its annual convention in San Francisco, last month, and New Haven, Conn., was selected at the 1932 place of meeting.

Dr. John Hobart Reed,

Of the class of '28, Medical College of Virginia, accompanied by his wife and young son, expect to leave Richmond, Va., August the 8th, for the Pacific Coast, whence they will sail for China. Dr. Reed is going out as a medical missionary and expects to be in the foreign field for seven years.

Women Sick More But Live Longer.

According to a report in the *Illinois Health Messenger*, women have more physical defects of a comparable character and they are more frequently ill from the diseases common to both sexes, but they live nearly two years longer on the average than do men.

Males find it much more difficult than females to survive the first year of life. During 1929 there were, for example, 4,555 deaths among male infants, against 3,348 among females, a ratio of 136 males per 100 females. In 1928 there were seventy-two male infant deaths per 1,000 births of male children, while the rate among females was only fifty-six per 1,000.

The American Therapeutic Society,

At its annual meeting in Atlantic City, June 5th and 6th, elected the following officers for 1931-32: President, Dr. Harvey G. Beck, Baltimore, Md.; First Vice-President, Dr. William J. Mallory, Washington, D. C.; Second Vice-President, Dr. Oscar W. Bethea, New Orleans, La.; Third Vice-President, Dr. Elsworth S. Smith, St. Louis, Mo.; Secretary, Dr. Grafton Tyler Brown, Washington, D. C.; Treasurer, Dr. Truman G. Schnabel, Philadelphia, Pa.

Dr. A. L. Carson, Jr.,

Of the class of '25, Medical College of Virginia, announces his new address as Fairfax, Va. Dr. Carson returned to Virginia about

a year ago after a service at the Nursery and Child's Hospital, New York City.

American Society of Physical Medicine.

A call was issued before the meeting of the American Medical Association for the formation, if thought best, of the American Society of Physical Medicine. This call was sent by Dr. Willis S. Peck, of the University Hospital, Ann Arbor, Mich., to the following, who, on June 12th, made an organization accordingly:

Dr. William Bierman, New York City.
Dr. J. S. Coulter, Chicago.
Dr. F. H. Ewerhart, St. Louis.
Dr. K. C. Hannson, New York City.
Dr. C. P. Hutchins, Syracuse, N. Y.
Dr. Guy Hinsdale, White Sulphur Springs, W. Va.
Dr. Richard Kovacs, New York City.
Dr. Frank Krusen, Philadelphia.
Dr. C. O. Molander, Chicago.
Dr. Josef Nylin, Philadelphia.
Dr. Frederick O'Brien, Boston.
Dr. Ralph Pemberton, Philadelphia.
Dr. Nathan Polmer, New Orleans.

This society is to consist of members who devote their entire time to the teaching and practice of physical medicine; and of associate members who may be doctors of medicine or scientists who have contributed to the scientific advancement of physical medicine but are not devoting their entire time to its practice and teaching.

The aims of this organization are to improve the practice of physical medicine, promote research, encourage clinical investigation, and advance its teaching.

Dr. J. S. Coulter, of Chicago, was elected president, and Dr. Willis S. Peck, of Ann Arbor, Mich., was elected secretary and treasurer.

Section on Medical Sciences, Virginia Academy of Science.

Announcement has been received from Dr. E. C. L. Miller, Richmond, secretary of the Virginia Academy of Science, that at its recent meeting the Academy authorized the organization of a new section—a Section on Medical Sciences. The officers of the new section appointed for the coming year are: Dr. J. Shelton Horsley, Richmond, as chairman, and Dr. J. E. Kindred, of the University of Virginia as secretary. It is expected that the new section will function along the lines of Section N of the American Association for the Advancement of Science.

There are already quite a number of physicians in Virginia who are members of the Academy and others interested in the fundamental medical sciences such as anatomy, bacteriology, biochemistry, embryology, pathology, pharmacology and physiology will be welcomed to membership in the Academy and to participation in the activities of this and other sections.

The Virginia Academy of Science now has active sections in biology, chemistry, geology, physics (including astronomy and mathematics), and psychology and education. At the recent meeting in Norfolk a total of 111 papers were read before these sections.

It is confidently expected that this new section will grow rapidly as it will offer scientifically inclined physicians an opportunity to read scientific papers before an appreciative audience, to take part in stimulating discussions, and to become acquainted with other like-minded scientific men.

Dr. W. H. Venable,

Recently of Farmville, Va., has moved to Chatham, Va., where he has accepted the position of physician to "Chatham Hall."

Dr. Joseph B. Graham,

Of the class of '28, University of Virginia, who has been for the past year at Bell Memorial Hospital, Kansas City, Kan., has located in Richmond, Va., where he is connected with the Department of Surgery of Memorial Hospital.

Hospital Associations Vote for Joint Meeting.

At the annual meeting of the North Carolina Hospital Association recently held in Durham, representatives of that group and of the South Carolina and Virginia Associations voted to hold a joint convention, probably in Richmond, Va., in 1931. They plan, at this time, to make a special effort to bring representatives of a large number of the hospitals of the three states to this convention. The joint conference is to be arranged by the presidents and secretaries of the State Hospital Associations of Virginia and each of the Carolinas.

Among the interesting papers presented at the Durham meeting were those by Dr. J. M. Shackelford, of Martinsville, Va., on some of the difficulties of the small private hospital conducting a nursing school, and one by Dr. John Bell Williams, director of St. Luke's Hospital, Richmond, Va., on the method of determining food costs at this hospital.

At the separate business meetings, the following officers were elected:

North Carolina: President, Dr. Harold Glascock, Mary Elizabeth Hospital, Raleigh; secretary, E. G. Farmer, Carolina General Hospital, Wilson.

South Carolina: President, F. O. Bates, (re-elected), Roper Hospital, Charleston; secretary, H. H. McGill, Columbia Hospital, Columbia.

Virginia: President, Dr. Knowlton Redfield (re-elected), Jefferson Hospital, Roanoke; secretary, M. Haskins Coleman, Jr., Johnston Willis Hospital, Richmond; trustee, Dr. John Bell Williams, St. Luke's Hospital, Richmond.

Dr. W. H. Walcott Joins Health Unit.

Dr. W. H. Walcott, of Fairfax, Va., has recently located in Chatham and has assumed his duties as Director of the county health unit of Pittsylvania County. This unit was recently resumed by the board of supervisors in cooperation with the federal and state governments.

State Health Officer of North Carolina.

Dr. James M. Parrott, of Kinston, N. C., has been appointed secretary of the North Carolina Board of Health and State Health Officer of that State, to fill the vacancy caused by the death of the late Dr. Chas. O'H. Laughinghouse.

American Psychiatric Association.

This Association, at its annual meeting, held recently in Toronto, elected Dr. William L. Russell, White Plains, N. Y., president for the ensuing year. Dr. Clarence O. Cheney, Poughkeepsie, N. Y., was re-elected secretary. It was voted to hold the next annual meeting in Philadelphia.

Dr. Robert L. King,

Of the class of '28, University of Virginia, until recently resident physician in the medical service at the University of Virginia Hospital, accepted a position on the medical staff at the Virginia Mason Clinic, Seattle, Wash., and assumed his new duties on July 1st. Since graduation from the Medical School of the University, Dr. King has served a regular internship at the University Hospital and at Blue Ridge Sanatorium, Va., and for the past two years has been resident physician on the medical service at the University Hospital.

Promoted in the U. S. Public Health Service.

The following doctors, graduates from Virginia medical schools, are among those recently noted for promotion and commission from Assistant Surgeon to Passed Assistant Surgeon in the Regular Corps of the U. S. Public Health Service: Dr. Oswald F. Hedley, of the class of '28, Medical College of Virginia, and Dr. Frank F. Thweatt, Jr., of the same class, at the University of Virginia, Department of Medicine.

Wanted—

Any eye, ear, nose and throat specialist wishing a companion to take more work in his line in Vienna and Budapest sometime next winter, please correspond with No. 302, care this journal. (*Adv.*)

For Sale—

McCaskey System cabinet: large model, slightly used; in excellent condition; cost $285, but will sell at bargain. Address No. 299, care this journal. (*Adv.*)

Practice and Residence For Sale.

Fine ten-room modern residence situated on the best street in town of 4,000 population—2,000 people in near surrounding territory. Four hard-surfaced highways. Collections 91 per cent. Accredited high school. Competition all right.

This is a great opportunity for a physician with children to school. Will sell on liberal terms or exchange for a small improved farm. Now, doctor, if you want to locate in the nicest town in Virginia, address No. 303, care this journal. (Adv.)

Obituary Record

Dr. Charles A. Brown.

Notice has just been received of the death of Dr. Brown on January 14, 1930, at his home in Dillwyn, Va. Death was due to angina pectoris. He was born in Bridgewater, Va., and was eighty-two years of age. Dr. Brown graduated from the Medical College of Virginia in 1872. He had been a member of the Medical Society of Virginia for twenty-two years. His daughter survives him.

Dr. Leonidas Camden Dickerson,

Of Stuart, Va., died in a hospital in that city, May 22nd, from diabetes. He was a native of Floyd County, Va., and sixty-two years of age. Dr. Dickerson graduated from the University of the South, Medical Department, Sewanee, Tenn., in 1901. He had practiced medicine in Stuart, Va., for about thirty

years. Dr. Dickerson had for several years been a member of the Medical Society of Virginia.

Dr. William Andrews Lucas,

Well known heart and lung specialist of Knoxville, Tenn., died June 20th of heart disease at the age of fifty-four. He was a native of Southwestern Virginia, and a graduate of the former University College of Medicine, Richmond, in 1901. Dr. Lucas went to Knoxville eight years ago. He served as a major in the medical division in France during the World War. Dr. Lucas had been a member of the Medical Society of Virginia for the past twenty years. His wife and a son survive him.

Dr. Reid Arnold Rosser,

Lynchburg, Va., died July 3rd, from injuries received when he fell from a third floor window of a hospital. He had been ill for sometime before his death. Dr. Rosser was fifty-nine years of age and a native of Rustburg, Va. He graduated from the former University College of Medicine, Richmond, in 1897, and had been a member of the Medical Society of Virginia for thirty-three years. Dr. Rosser was formerly located at Portsmouth, Va. His wife and two children survive him.

Dr. James William Graham,

Belfast Mills, Va., died July 16th, from gunshot wounds inflicted by a man living in that neighborhood, when Dr. Graham resented the fact that he had been struck by a rock which the man was throwing at a third party. Dr. Graham was fifty-five years of age and a graduate in medicine from Lincoln Memorial University, Knoxville, Tenn., in 1897. He was a member of the Russell County Medical Society. Dr. Graham is survived by his wife and two sons.

Dr. William S. Keister,

Towson, Md., former health officer of Prince Georges County, Md., and recently medical inspector of the Baltimore County Schools, died July 3rd, at Walter Reed Hospital, Washington, D. C., following an operation. He was forty-four years of age and the only son of Dr. and Mrs. B. C. Keister, of Washington, D. C. He was a graduate in medicine from Johns Hopkins University, Baltimore, in 1914, and had been in public health work over since his service in France during the World War. Dr. Keister was for a time connected with the Virginia Department of Health and was at one time professor of public health at the University of Virginia. His burial was made in Arlington National Cemetery, with military honors. Besides his parents, Dr. Keister is survived by his wife, two sons and a sister.

Dr. John Osborn Polak,

Brooklyn, N. Y., one of the leading obstetricians in this country, died suddenly of heart disease on June 29th. He was sixty-one years of age and graduated in medicine from the University of Vermont, College of Medicine, Burlington, and also from the Long Island College Hospital, Brooklyn, in 1891. He had long been a leader in the profession and held many positions of honor. He will be remembered by many of our members as having been a guest speaker at our meeting in Staunton, in 1924.

Resolutions of the Richmond Academy of Medicine Upon the Death of Dr. Ennion G. Williams.

WHEREAS, the Richmond Academy of Medicine has learned with profound regret of the death of their beloved and esteemed past president, Dr. Ennion G. Williams; therefore be it

RESOLVED, that the members of the Richmond Academy of Medicine feel that in the death of Dr. Ennion G. Williams the loss to the medical profession is not their's only, nor alone that of the State of Virginia, but that the whole country has lost a leader in preventive medicine. As a pioneer he pointed the way, as an executive he planned and obtained the means, and as a public servant he furnished the example of what should constitute an ideal health official. The reparation for this loss is that his labor is deathless in that he lives and will live in the health and in the life of those who are and those who are to come. Virginia is proud to point to him among her great and immortal sons. But those of us who lived close to him in this his home city had the advantage of watching his life unfold, a blessed privilege, and of knowing the qualities which raised him to his great achievements; therefore be it further

RESOLVED, that in the sorrow of his death we come to a realization of the legacy he has given us of an example of high endeavor, of gentleness of manner and of sweetness of spirit combined with the qualities of sustained labor and, when occasion demanded, of valorous combat. With the gallantry of Sir Philip Sidney, the sacrificial modesty of Walter Reed, the determination to conquer disease of Edward Jenner, and, when aroused, the battle inspiration of Stonewall Jackson, he went through life among us loved, admired and respected as one who fulfilled the two great commandments, loving his fellow man and fearing only God's displeasure. Be it further

RESOLVED, that these resolutions be spread upon the minutes of the Academy, that a copy be given the daily press and that a copy be sent to the family of Dr. Ennion G. Williams.

BEVERLEY R. TUCKER, *Chairman,*
A. L. GRAY.
W. T. GRAHAM,
E. C. LEVY,
JAMES H. SMITH.

OVER 50 WAYS TO KEEP A DIABETIC PATIENT HAPPY!

JELLIED VEGETABLE SALAD

(Six Servings)

	Grams	Prot.	Fat	Carb.	Cal.
1 tablespoon Knox Sparkling Gelatine	7	6	....	....	....
¼ cup cold water	....	....	....	....	....
1½ cups hot water	....	....	....	....	....
1 teaspoonful whole mixed spices	....	....	....	....	....
½ teaspoon salt	....	....	....	....	....
⅓ cup vinegar	....	....	....	....	....
½ cup chopped cabbage	50	1	....	3	....
½ cup chopped celery	60	1	....	2	....
¼ cup canned green peas	40	1	....	4	....
¼ cup cooked beets cubed	40	1	....	3	....
Total		10	....	12	88
One serving		2	....	2	15

Soak gelatine in cold water for five minutes. Bring to boil water, salt and spices. Pour on gelatine to dissolve it and add vinegar. Strain and set aside to cool. When jelly is nearly set, stir in the vegetables, pour into mold and chill until firm. Unmold on lettuce leaf or shredded lettuce and serve with mayonnaise or salad dressing. Garnish with sprig of parsley or strip of pimento.

CHOCOLATE PUDDING

(Six Servings)

	Grams	Prot.	Fat	Carb.	Cal.
1½ tablespoons Knox Sparkling Gelatine	10	9	....	....	....
¼ cup cold water	....	....	....	....	....
2 cups milk	480	14	19	24	....
¾ cup boiling water	....	....	....	....	....
1 square chocolate grated (1 oz.)	30	4	15	9	....
Pinch salt	....	....	....	....	....
Pinch cinnamon	....	....	....	....	....
¼ teaspoon vanilla	....	....	....	....	....
1 gr. saccharin	....	....	....	....	....
Total		27	34	33	546
One serving		4.5	6	5.5	91

Soak gelatine in cold water five minutes. Melt chocolate in boiling water. Add gelatine and stir until dissolved. Add milk, salt, cinnamon, vanilla and saccharin. Stir well and chill. When nearly set, heat until frothy, mold and chill until firm. Serve plain or with thin cream or whipped cream.

ACCEPTED — AMERICAN MEDICAL ASSN. — Committee on Foods

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THE QUESTION OF MORTALITY IN ACUTE APPENDICITIS.*

By HARVEY B. STONE, M. D., Baltimore, Md.

There has been an increasing number of articles in the medical literature which indicate dissatisfaction and concern about the mortality rate in cases of appendicitis. The impression derived from reading these papers is that there has been a slow but steady rise in the percentage of mortality over the last twenty or twenty-five years. For instance, Willis[1] in 1926 quotes from *Figures of the Census Bureau* a statement in regard to the mortality rates in certain surgical conditions over several decades. He shows that the death rate associated with hernia has fallen from 13 per 100,000 population in 1901-1905 to 10.7 per 100,000 in 1921. In the period from 1905 to 1921, the mortality rate from surgical diseases of the kidney decreased 11 per cent, while that due to involvement of the pelvic contents fell over 26 per cent. In the same period, that is to say from 1901 to 1922, the mortality rate of appendicitis rose about 31 per cent. He also calls attention to the fact that the number of deaths annually from appendicitis equals all of those from salpingitis, pelvic abscess, surgical diseases of the pancreas, spleen, thyroid, gall-stones and ectopic pregnancy. Before the age of forty-five more persons die annually from appendicitis than from cancer.

Archer and Young[2] state that the death rate as a result of appendix disease is increasing at the present time. They quote the average mortality from various sources in appendicitis as varying from 2.9 per cent to 8 per cent, rising as high as 16 per cent for perforated cases alone. Only nine hospitals out of thirty-four reported in one study had a mortality of 3 per cent or less.

Lower and Jones[3] report an experience based upon 6,187 operations for appendicitis and state that the mortality rate is still too high, ranging from 3 to 6 per cent. They also state that the death rate in England and Wales tends to increase rather than diminish.

Hoffman[4] confirms the figures of Willis and shows a steadily rising death rate since 1900 when there were 9.7 deaths per 100,000 to 14.9 in 1924.

The experience of Duggan[5] is contrary to that of the authors just quoted. He states that in the particular case of the Boston City Hospital the mortality has sunk from 1895-1896, when it was 20.7 per cent, to the figure of 3.1 per cent in 1921-1922. He states that the lowering in mortality is best explained as being due to earlier recognition of the disease and improved methods of treatment.

In the *Statistical Bulletin*[6] published by the Metropolitan Life Insurance Company these figures have been studied for the country as a whole and the conclusion is reached that there has been an increase of 20 per cent in the death rate of white males and 14 per cent for white females since 1911. A consideration of various reasons for this increase accompanies the figures but no conclusion is reached to explain them.

It is naturally disconcerting to a surgeon to have doubts arise as to the outcome of operative treatment in a group of cases usually thought to be among the most satisfactory of those commonly encountered. Because of this feeling, the writer was prompted to review his own personal experience in the last ten years to check up exactly on the mortality rate and to compare it with the figures quoted above. Before the actual statistical study was made, the impression obtained that extremely few cases of appendicitis were lost and, as will be observed from the figures, this turns out to be the case. As a matter of fact, there have been only two deaths in the past ten years, and one of these occurred in an exceptionally difficult and dangerous situation because of the patient's general physical condition. Before dealing with the details of this report, it should be stated that no intention is entertained of drawing personal credit from the ex-

*Read before the Richmond (Va.) Academy of Medicine, March 24, 1931.

perience herewith reported. The writer does not differ in any material manner from the customary method of handling appendicitis. His operative procedures are standard and there is no reason to look for personal praise in the very good results obtained. On the other hand, the whole purpose of this paper is to show that under favorable conditions, the mortality in acute appendicitis should be extremely low and to discuss what these conditions are. The actual material involved in this study includes 226 cases, all done personally by the writer. Of this number, seventy-nine are classified as chronic appendicitis, twenty-two as sub-acute appendicitis, and 125 as acute appendicitis. This yields a percentage mortality rate of less than nine-tenths of one per cent for the whole group, and exactly 1.6 per cent for the acute cases alone. Among the cases classified as acute appendicitis, none were included which did not actually show definite and marked signs of acute, intense inflammation. All others were grouped as sub-acute or chronic. Among the 125 acute cases were included a number with gangrene, abscess and spreading peritonitis. In this report no attempt will be made to differentiate these different grades of acute inflammation as they represent nothing more than various stages in the development of the same process. It has been customary in reports such as this to divide the acute cases into various categories, such as with abscess, with gangrene, with peritonitis, etc. This is a perfectly proper distinction to make in pointing out the varied duration and intensity of the disease and these two factors doubtless have been the greatest influence in determining the rate of mortality. The custom of recognizing such groups and comparing them with each other, to establish relative mortality hazards, is thoroughly sound. In this instance, however, as there were only two deaths in the entire series including all of the intenser forms of appendicitis, there seems no reason to divide this group up into sub-headings. The group herewith presented represents the usual wide age distribution that other statistical studies have made familiar. The average age of greatest incidence is in early adult life but among the cases herewith reported there are four at two years of age, and at the other extreme, one at eighty-three years of age. All of these particular patients recovered.

The one important respect in which this series of cases differs from most of those elsewhere reported is that it represents the work of one man in a large city containing a highly trained medical profession and a general public well aware of the danger lying in acute abdominal attacks. Extremely few of these patients lived more than a few miles from the borders of the City. They were all of them private patients in the sense that they were not admitted to the general service but were personally referred to the surgeon, nearly always by their family physicians and in a few rare instances by some close friend. As a consequence of this, the thing which characterizes this selection of cases of acute appendicitis is the short time which elapsed between the onset of the disease and the removal of the appendix. In a number of cases this interval of time was less than twelve hours. In more than half the cases it was less than twenty-four hours, and in very few was the interval greater than forty-eight hours.

This factor of the short interval of time elapsing between the onset of the attack and its operative treatment is universally recognized as the most important single element in securing a high percentage of recovery. It has been said that it is better to have a poor surgeon operate early in cases of intestinal obstruction than to have the best surgeon in the world operate later. A very similar situation exists in acute appendicitis although not absolutely identical. It is true that a certain number of appendicitis cases, if left untreated, will spontaneously recover; whereas, this can scarcely be hoped for in obstruction cases except in the result of some very curious, special circumstances. In spite of the possibility that a certain number of cases of appendicitis will get well of themselves, it remains true that many will not recover if left alone and that the chance for all of them to do best lies in early surgical intervention. Therefore, those surgeons who are so situated that they can secure their patients early in the development of the attack of acute appendicitis should, naturally, be able to present very much better mortality statistics than are obtained in less favorable circumstances. The writer belongs to such a group and it is not surprising that the statistics herewith reported should be better than those of a large mixed service in a general hospital or collected statistics from

the country at large. Surgeons whose practice is scattered over a wide area of territory with long distances to be covered cannot expect to get their cases as early as when the patients come from close at hand. In a similar way, a rural population, where the family physician is often late in being called to the case, will also show a corresponding increase in the number of late operations. The general surgical service of a large hospital, drawing much of its public ward material from the ignorant and less fortunate group of the population, will also how a higher proportion of late cases. Many of the cases in such a group are afraid of operation, many of them are so poor that they put off sending for medical aid in the hope that they will not need it and some of them are so neglectful of their own physical conditions that they will stand a great deal more pain for a longer time without seeking assistance than that part of the population which is better educated and more intelligent.

The importance of delay is very well illustrated in the case of one of the patients who was lost. This patient was a man forty-three years of age whose family physician asked to have me see him within less than forty-eight hours after the onset of the disease. Upon examination he was found to present symptoms which led to a diagnosis of probable appendicitis of not very intense form. Besides this acute condition, he was found to be excessively obese, weighing about 260 pounds, very short of breath with decidedly handicapped heart muscle and, in general, a poor subject for anesthesia. Because of the immense thickness of his abdominal wall, it was felt that local anesthesia would be difficult or impossible to employ. In view of the fact, as stated above, that acute appendicitis not infrequently undergoes spontaneous improvement, it was thought wise, in this particular instance, to adopt a waiting attitude in the hope that he might not require operation. It should be said at this point that with the exception of this one case, all the others in this series were operated on practically as soon as possible after a probable diagnosis of appendicitis was made. That has been the custom of the writer for many years and has given such satisfaction as to become a routine. In this one case, where an exception was made to the rule, misfortune resulted. The patient was watched for about thirty-six hours longer at which time an increasing temperature, pulse rate and leucocyte count made it imperative to interfere in spite of his general condition. He was operated on and a gangrenous appendix was found, the wound was drained and for a few days the patient did fairly well although he developed a sour smelling, fermentative infection in his incision. He died on the eighth day with gradually weakening circulation and without any evidence of obstruction or peritonitis. The cause of death officially given was "fatty myocarditis." In reviewing this one fatality, the reasons for delay in operation still commend themselves as being sound, but, as a matter of practical fact, since operation became necessary eventually and revealed a gangrenous appendix, there is no doubt that practically his chances would have been greater had the custom been followed of prompt operation in spite of his unfavorable general physical condition. The other death occurred as a result of paralytic ileus following a gangrenous appendicitis, operation being done about eighteen hours after onset.

To revert to the data elaborated in the first paragraph of this paper, there have been recent publications showing an increase in mortality from acute appendicitis which may have caused doubt to arise in the minds of the profession or of the laity as to the adequate treatment of this disease at the present time. There may be many explanations for this increasing mortality percentage. One probable element in the increase is the proper listing of deaths as due to acute appendicitis which twenty-five years ago, without autopsy or operation, would have been put down under some other category. The improvement in diagnosis and the increasing frequency of operation have revealed many cases as due to appendicitis which in earlier years would not have been recognized as such. Another possible explanation, which may be advanced to account for the higher mortality rate recently reported is that many more men are doing surgery all over the country than was the case twenty-five years ago and, furthermore, the impression has become current that anybody can operate on appendicitis. These two factors have led, no doubt, to the performance of operation under circumstances not the best for favorable results and by men not adequately trained to handle a condition which, in some of its phases, may tax to the

utmost the skill of the might highly trained surgeon. There may be other factors leading to the increased mortality rate that has been reported, such as the increasing vogue of Christian Science and other cults with resultant neglect of the development of dangerous conditions. The one purpose of this paper is to show that there is nothing inherent in the nature of the disease or the surgical treatment of it that can be held responsible for an increasing mortality. It is perfectly possible to secure a series of results with extremely low mortality by following the well recognized methods of operative treatment, provided one essential is constantly borne in mind and put into practice. That essential is the early recognition and prompt operation for cases of acute appendicitis. This short series, while insufficient to serve as a basis for general conclusions, is ample to show that in a community where the medical profession generally is alert to the danger of delay in acute abdominal conditions and where the general public also has been educated to expect prompt surgical treatment in such situations, there is no need to fear a rising mortality hazard from the surgical treatment of appendicitis. There will always remain an irreducible minimum of fatalities. Such accidents as pulmonary embolism and coronary occlusion cannot now be guarded against. Occasionally a particularly virulent organism or a particularly handicapped or non-resistant patient will bring to pass an unexpected death. But, with the exception of such rare occurrences, the operative treatment of appendicitis, promptly and properly executed, yields results of the most satisfactory character in nearly every case.

References

1. Willis, A. M: *Surg. Gyn. & Obst.*, 421-318 (March), 1926.
2. Archer, A. E. and Young, M. A. R.: *Canadian Med. Jour.*, 16-491 (December), 1926.
3. Lower, W. E., and Jones, T E.: *J. A. M. A.*, 81:629-631, (August 25), 1923.
4. Hoffman, Fred. L.: *Spectator*, 120:11, 29-30 (January 5), 1928.
5. Duggan, D. J.: *Boston M. and S. J.*, 192:247-249, (February 5), 1925.
6. *Statist. Bull. Metrop. Life Ins. Co.*, Vol. 9, No. 7, July 30th.

18 *West Franklin Street.*

THE PRACTICING PHYSICIAN AND ADULT EDCATION.*

By GREER BAUGHMAN, M. D., F. A. C. S., Richmond, Va.

When Dr. Charles G. Maphis invited me to discuss the practicing physician and adult education before the Round Table Conference on Adult Education as a part of the Institute of Public Affairs, I felt a hesitancy in undertaking a task that had so ably been discussed by Mr. Geo. B. Zehmer and Mr. Geo. W. Entsler in Post-Graduate Medical Education in Virginia, University of Virginia Extension Series. It occurred to me, however, that a discussion of the education of the doctors of Virginia from the earliest times coupled with a report of my own experience with a plan for post-graduate instruction in obstetrics might be helpful.

The task of gathering data has been greatly simplified by Dr. Wyndham B. Blanton who published, in 1931, "Medicine in Virginia in the Seventeenth Century."

Anatomy during the seventeenth century was fairly understood in England in spite of the fact that dissection of the human body was frowned upon by the public and that even in Edinborough, the most important of the medical schools, there was no skeleton until 1697. Physiology was beginning to be understood and obstetrics was in the hands of the midwives. There was no real understanding of disease. While numerous empirical remedies were used they probably did more harm than good.

The first physician in Virginia was Henry Kenton, a ship surgeon, who in 1603 with four others landed ashore while in the "Chesepian Bay in the country of Virginia." They were ambushed and killed by Indians.

In May, 1607, when the colony was finally established at Jamestown, Will Wilkinson, a chirurgeon, was classified with Will Barrett, the bricklayer, and Thomas Cowper, the barber. Grouped with the gentlemen was Thomas Wooton, chirurgeon. In 1608, there were Walter Russell, Doctour in Phisick, Post Ginnat, chirurgeon, and two apothecaries, Thomas Field and John Harford.

It was Dr. Walter Russell who treated Captain John Smith at Stingray Point when he was wounded by a stingray and almost lost his life.

In 1610, Lord Delaware brought with him

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to Virginia Lawrence Bohun, Doctor in Phisick. Both Russell and Bohun were in all probability graduates in medicine. Russell was an educated man because he wrote, according to Captain Smith, the account about the stingray and Bohun is said to have been "a long time brought up amongst the most learned surgeons and physitions in the Netherlands."

Jamestown was settled by 105 colonists. By the end of the century more than 10,000 Englishmen had emmigrated to Virginia. Even with the natural increment due to births there were only 75,000 people at the end of the century. Their enormous death rate does not speak very well for the skill of the doctors.

Those that were killed by the Indians and died of starvation could hardly be laid at the doctor's door. Food deficiency diseases such as beriberi and scurvy were prevalent. Malaria was probably not fatal, but typhoid diagnosed as malaria was the disease in particular that killed. Influenza, pneumonia and pleurisy took their toll. Smallpox was as common in Virginia as it was in Europe. Unfortunately, Jenner did not publish his first work "An inquiry into the causes and the effects of Variola Vaccinae" until 1798. Measles, dysentery and yellow fever were among the fatal diseases and unfortunately for the colonists the purgings and sweats and blood letting were the doctor's main method of attack both here and abroad.

When Virginia was settled the physicians and surgeons were with a few exceptions English. They had been educated and trained for their profession in England or at Leyden. The physicians were the second sons, the surgeons and pharmacists were the third sons of country gentlemen. The physicians were educated at Oxford, Cambridge, Edinborough or Leyden. The surgeons and pharmacists were not so well educated.

They studied anatomy, botany, a little chemistry and physics, which were very new at the time; a few learned something of pathology. Such men were considered well educated and called doctors of physic. The majority of the doctors received their instruction and acquired their medical knowledge by appenticeship. There is record of only one native Virginian who was a Doctor of Physick, John Lee, B. A., of Queens College, some where about 1658. Some of the wealthier parents sent their sons to England to study under the eminent doctors there. The great majority of the native Virginia doctors studied their medicine as apprentices to doctors already established. We call it apprenticeship by courtesy; really it was indenture servitude. Among those recorded as indenture servants, were Patric Napier, Richard Townsend, 1621, Francis Hadden, John Williams about 1640, and John Innman, 1628. There is nothing particularly new or strange about indenture, for all of the colonists were indenture servants of the London Company from 1607 to 1619. They paid for their passage from England and for their keep in this manner.

In 1634 a free school was established for the children of Elizabeth City and Kecoughtan parishes; 1652 and 1659 found similar schools set up in Northumberland and Northampton counties and others. The prospective doctors studied at these schools and in many instances taught in them.

The London Company decided to build a university and a hospital in 1611. A site was selected upon the James River about fifty miles above Jamestown because Henricopolis was already a thriving town at that point. The site of this town is what we call Dutch Gap now. The buildings for the hospital and university were completed in 1612. The hospital was for the accommoditation of eighty patients and the beds were on hand before the hospital was completed. The whole was surrounded by a palisade. In 1622, the town, the university, the hospital were wiped off the earth by the Indians. It was not rebuilt. We have no record of the work of the hospital or the college. We do not know whether it was used for teaching purposes or not.

We do know that the first permanent hospital was the University of Pennsylvania Hospital, established in 1750, and the first permanen medical school at the same place in 1766. These were almost one hundred and fifty years after the establishment of the hospital at Henricopolis.

On February 8, 1693, the charter of William and Mary College was signed and the college was opened in 1694 with Dr. John Blair as the first president. At last the doctors had a place in Virginia where they could receive a better education, but unfortunately there was no medical school either at William and Mary, or, for that matter, anywhere else in the colonies where they could study medicine. The

century ended with Europe the nearest place that a medical education could be obtained except for apprenticeship.

The first nurses were the wives of the physicians. Obstetrics was entirely in the hands of the midwives. Goodwife Thorpe practiced in Surry County about 1685 and charged a hundred pounds of tobacco as a fee. Hannah Webb, of Isle of Wight County, Susan Evans and Elizabeth Tindall, of York County, were among the best known.

There were few physicians or surgeons who were sufficiently prominent to be mentioned during the seventeenth century and they were mentioned more because they made history than because they were good in their practice of medicine. In addition to those already mentioned, there were Lawrence Bohune (-1622), the first physician general to the Colony of Virginia, John Pott (-1652) who succeeded Dr. Bohune and was a first-class politician who caused lots of trouble at Jamestown and was a thorn in the side of Captain John Smith, and John Mitchell, the botanist, who lived in Urbanna, but was born, educated and lived in England until about 1700.

The best comment upon the doctors of the seventeenth century in Virginia is that many of the citizens owned medical books; some libraries had as many as a hundred volumes devoted to medicine. They treated their own ailments rather than trust to the colonial doctors. Noteworthy among layman book doctors were Richard Lee and William Byrd.

The same sort of training for physicians continued through the eighteenth century until 1776 when a medical course was started at the University of Pennsylvania. There was probably a little more general knowledge gleaned from William and Mary or Harvard. In Virginia, John Mitchell, the botanist, still lived at Urbanna and did not die until 1768; Hugh Mercer (1725-1777), born in Scotland and graduating from the Medical School of Marschall College in 1744, was located in Fredericksburg, where he bore the reputation of being a good physician, but is better known as a General in the Revolution; William Cabell (1700-1774), born in England, a graduate of the Royal College of Surgeons, London, practiced in Williamsburg, Henrico County, Goochland County, and Nelson County. He did an extensive surgical practice, maintaining at his home a private hospital. John Leigh, who was a student at William and Mary in 1769 and took his degree in Europe, lived in King William County and took the Harveian prize in 1785 on opium, in which he reported experiments on animals and man.

The establishment of the first insane asylum in the colonies at Williamsburg in 1773, was noteworthy in that it proved the means of giving post-graduate instruction to a whole family of alienists. Beginning with James Galt, then Alexander D. Galt (1777-1841), John Minson Galt (1700-1808), John Minson Galt, 2nd, the Galts were superintendents for nearly a century.

On December 4, 1779, Thomas Jefferson and President Madison induced the Board of Visitors of the College of William and Mary to abolish the grammar school and two divinity schools and to start a school of medicine. Dr. James McClurg (1746-1823) was elected the first Professor of Anatomy and Medicine. His father was Dr. Walter McClurg, of Elizabeth City County. Dr. James McClurg graduated from William and Mary in 1762, took his M. D. degree from the University of Edinborough in 1770, did post-graduate work in Paris and London, and located at Williamsburg in 1773, soon becoming the leading doctor in the State. The course in medicine continued until 1783.

The troublesome times preceding the revolution probably helped in the establishment of medical courses at the University of Pennsylvania in 1765, Columbia, New York in 1767, and William and Mary, because it made those seeking higher education feel that Europe was not safe for them. After the revolution was over this pressure for medical instruction resulted in the establishing of medical courses at Harvard in 1782, Rutgers (Queens) in 1792, University of Maryland in 1807, Yale in 1810, Bowdoin in 1820, George Washington in 1825, Medical School of the Valley of Virginia at Winchester in 1826, Winchester Medical School in 1826, University of South Carolina in 1823, University of Virginia in 1827, University of Georgia in 1828, Tulane in 1834, Medical College of Virginia in 1838, first as the medical department of Hampden-Sidney and in 1854 as the Medical College of Virginia in 1913, consolidating with the University College of Medicine which was founded in 1893, Mettauer's Medical Institute in Prince Edward County, Virginia, in 1837, which was chartered as the medical department of Randolph-

Macon College in 1848, but discontinued in 1860.

For the next century Virginians who were interested in medical education could receive training in medical schools close at hand or in some neighboring city. The system of apprenticeship continued until the establishment of the Medical Practice Act, February 22, 1884, which established a State Board of Medical Examiners and made it almost impossible to obtain a license to practice medicine without graduation from a reputable medical school.

If the doctors wanted post-graduate instruction, they went abroad or to some of the larger cities in America where the clinical and pathological material was more plentiful. Gradually these centers, as a result of the pressure of post-graduate students, developed a post-graduate system of instruction, this occurring sooner in Europe, particularly in Vienna. The medical schools of Virginia made several attempts towards post-graduate instruction but with poor success.

The meetings of the Medical Society of Virginia first organized in 1820, re-organized in 1870, were most important in developing and instructing the doctors of the State.

Among the physicians who lived during these times and contributed to the instruction of others might be mentioned William Baynham (1749-1814), who served for five years under Dr. Walker, of Caroline County, and then went to London to complete his medical education. He was prosector of anatomy at Cambridge and practiced in England for sixteen years. He located in Essex County and became a famous surgeon. He was the first who operated successfully for ectopic pregnancy in 1790 and again in 1799. John Peter Mettauer (1787-1875), A. B. Hampden-Sidney 1806, M. D. University Pennsylvania 1809, returning to Prince Edward County, became a great surgeon, performing 800 operations for cataract, 400 for vesical calculus, was the first to use metal wire and cure vesico-vaginal fistula, and first to operate for cleft palate. He taught many doctors and nurses and finally organized a medical school. Agrippa Nelson Bell (1820-1911) studied under Dr. Geo. C. Blackman. He was an M. D. at Jefferson Medical College 1842, settled at Franktown, Va., afterwards went into the Navy, and was the first to use steam as a disinfectant. William Brown (17 - - 1792) M. D., University of Edinborough, 1770, settled in Alexandria, Va., wrote "Pharmacopoeia for the Use of Army Hospitals."

Among those who influenced medicine in the State and who taught at the University of Virginia might be mentioned James Lawrence Cabell (1813-1889), M. D. University Maryland, post-graduate in Paris; James Edgar Chancellor (1826-1896), M. D. Jefferson Medical College 1848; William Cecil Dabney (1849-1894), M. D. University of Virginia 1868; John Staige Davis (1824-1885), M. A., M. D. University of Virginia 1841, post-graduate in Philadelphia; Robert Empie Rogers (1813-1844), M. D. University Pennsylvania 1836; John Lawrence Smith (1818-1883), M. D. Charleston Medical College, post-graduate in Europe; William B. Towles, M. D. University of Virginia 1867; Robley Dunglison (1798-1869), Surgical Degree Royal College of Surgeons, M. D. Erlangen 1823; John Patten Emmett (1796-1842), College of Physicians and Surgeons 1822; Richard Henry Whitehead (1865-1916), M. D. University of Virginia 1887.

Of those who worked at the Medical College of Virginia for the advancement of medicine in the State might be mentioned Robert Thomas Coleman (1830-1884), M. D. University of Virginia and Jefferson Medical College, post-graduate in Blockley Hospital; John Syng Dorsey Cullen (1832-1893), M. D. University of Virginia, 1853, post-graduate in Philadelphia and in Europe; Frank D. Cunningham (1836-1885), M. D. Medical College of Virginia 1857 and New York 1859, post-graduate in New York, Paris and London. Henry H. Levy (1850-1921), M. D. Medical College of Virginia, 1871, post-graduate at Blockley Hospital, Philadelphia; Charles Bell Gibson (1788-1868), M. D. University Pennsylvania 1836; George Benjamin Johnston (1853-1916), M. D. University City of New York 1876; M. L. James (1829-1907), M. D. Jefferson Medical College 1862; Levin Joynes (1819-1881), M. D. University of Virginia 1839; James B. McCaw (1823-1906), M. D. University of New York 1844; Charles Edward Brown-Sequard (1817-1894), M. D. Paris 1846; Landon Brame Edwards (1845-1910), University City of New York 1867, post-graduate New York City; David Hunter Tucker (1815-1871), M. D. University of Virginia 1836 and University of Pennsylvania, post-graduate in Paris; Hunter Holmes McGuire

(1835-1900), M. D. Winchester Medical College 1855, post-graduate in Philadelphia; Daniel J. Coleman (1866-1912), M. D. Medical College of Virginia 1884; Jacob Michaux (1851-1918), M. D. Medical College of Virginia 1875.

Hugh Holmes McGuire (1801-1875), M. D. University of Pennsylvania 1822, helped to establish the Medical School of the Valley of Virginia, at Winchester, Va., in 1826, professor of surgery in 1850. He is said to be the first Virginian to operate for cataract, and to have done the first club-foot operation in America. He was the first of a distinguished family of Virginia surgeons.

From this brief survey of the education of the doctor from the establishment of the first permanent settlement at Jamestown, in 1607, and a record of those that left a sufficient impression upon their times to have their names recorded, we must conclude that education is the most important element in their success.

Granting that the native ability of the doctors of the seventeenth was as great as in subsequent times, we note with sorrow that the great majority of them were without honor in their community and we attribute it to a lack of education. In proportion as educational opportunities presented themselves and were grasped, the doctor advanced in society. Those that really made a name for themselves almost without exception did post-graduate work.

Medicine in this day is making such enormous strides that a doctor who does not read, consult with his colleagues, attend medical meetings, and make contact with teaching centers is hopelessly lost.

So much is this true that the cities are becoming overrun with doctors and the country is being depleted. The reason is perfectly obvious,—the better men want to touch elbows with progressive medicine and they believe they can make a better living in the cities.

The medical profession can very easily return to the conditions of the seventeenth century in Virginia if the doctor will continue to practice with the knowledge that he had when he got his diploma. The public will then diagnose and treat their own diseases with the aid of popular up-to-date medical books.

From the standpoint of education there are two groups in the medical profession—a kynetic group that demand more instruction, more clinics, more opportunities for advancement than we can give them, and the potential group that are perfectly contented and even resent an attempt to activate them. These two groups are to be found in the cities and towns as well as the country.

The department of education of the Medical Society of Virginia has done a splendid piece of work for education in fostering regional clinical conferences over the State. No one could be offended if Dr. J. Allison Hodges were singled out for praise because of interest in this work.

The sort of education that the doctor needs after he has left college might be designated as acute and chronic. The chronic is that general medical information both scientific and practical that will bring him up-to-date. The acute is that which is needed at once to save lives.

A certain part of the acute education the Board of Health most ably attends to. The Board of Health attends to education about the communicable diseases in the interest of the public as a whole. Those troubles that belong to the individual and cannot be given to anyone else are particularly problems for the doctor. Just at present, two problems that must be solved by the doctors are the high obstetrical and cancer mortality.

One-third of the women who die as a result of pregnancy or childbirth can be saved if they contact a doctor who in turn examines them properly and treats them the right way. Contact with a doctor who can recognize cancer early enough and will recommend an operation will save most cases. Contact with a trained doctor is the answer in both cases.

A joint committee, made up of equal representation from the University of Virginia, the Medical College of Virginia, and the Medical Society of Virginia, has decided that in the case of the obstetrical and cancer problem an emergency exists and have recommended that the situation be met with a different plan than that set up for general post-graduate instruction, with regional post-graduate conferences, etc.

They have recommended that a doctor be employed and be sent with whatever help he may need to the doctors individually or in groups, in order to instruct the ones that need instruction in prenatal care and in office gynecology. This doctor will have to be a diplomat, a

trained clinician along obstetrical and gynecological lines, and above all he must be *not* a practicing physician. He must devote his whole time to instruction and not be connected with any clinic or hospital.

In this way we will be able to save many lives and to open a new means of livelihood for the doctor.

BIBLIOGRAPHY

American Medical Biographies, by Kelley and Burrage.
Medicine in Virginia in the Seventeenth Century, by Wyndham B. Blanton, M. D.
Williamsburg, the Old Colonial Capitol, by Lyon G. Tyler, LL. D.
Flora Virginica, by D. D. Johanni Claytono, M. D., et Botanico Eximo.
The History of Virginia, by Charles Campbell.
The History of Virginia, by R. Howison
Narrative of the First English Plantation of Virginia, by Thomas Hariot.
Sketches of Virginia, by William Henry Foote.
Post-Graduate Medical Education in Virginia, by Geo. B. Zehmer and Geo. W. Eutsler, *University of Virginia Record Extension Series*, Vol. XIV, No. 10, April, 1930.
The English Scholars Library—Captain John Smith.

26 *North Laurel Street.*

VISUAL FIELDS IN TOXIC BLINDNESS, DUE TO FOCI IN THE MOUTH AND NOSE.*

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It is quite commonly conceded by physicians that blindness may occur in almost any acute disease—especially that of the nasal sinuses. Even frank optic neuritis with atrophy is not an unusual complication; in fact, it occurs quite frequently after purulent sinus infections. However, ophthalmologists have not, as a rule, given general recognition and study to the visual field changes due to infections in the mouth and nose.

When blindness, either partial or complete, or contraction of the visual fields occurs, with no retinal pathology demonstrable to eye of the observer, one is apt to say "toxic blindness" for want of a better name.

Blindness occurring in apparently healthy persons may be toxic. There is a post-bulbar edema of the optic nerve which may ensue for a number of days before a well defined neuritis becomes fixed. Unless the cause is sought and removed, the natural sequence is total optic nerve atrophy.

A valuable aid in the practice of ophthalmology, visual field measurement is often neglected. For the past ten years that we have measured fields almost as a routine, we have obtained information in the premises which is valuable.

Visual field significance in toxic blindness has been little emphasized in the literature; we feel that it is an important study.

We wish to report fifteen cases. The series tends to emphasize field mapping in all cases of visual disturbance, however slight. Each case, with the aid of several practitioners or internists, usually both, was given a complete physical examination with complete laboratory and X-ray studies. The especial "eye single" was out for the detection of syphilis, tuberculosis, nephritis, diabetes and heart lesions.

Each patient came to consult us for disturbance of vision; most of them had no knowledge or suspicion that there was any lesion except in the eye. Nine of the patients had to be led to the office. Each case was of recent origin. Splendid cooperation was had on the part of these patients. A prompt frank statement was made as to the seriousness of the matter, and it was impressed on the mind of each that unless we had such cooperation we would have little to hope for short of stone blindness. If we could find the focus and remove it, there was likelihood of the vision improving.

Ophthalmoscopic examination revealed no pathology, except in one case. The Wassermann reaction was negative in each case. There was a history of syphilis in one case. There was latent tuberculosis in one case, also some albumin and casts in one case. The physical findings were negative with the above exceptions, save the foci in the mouth and nose. Steps to remove the foci were taken immediately upon discovery of the same. Each case, with one exception, was given the same medical follow-up treatment, i. e., calomel, one-quarter grain, and sugar of milk, one grain, administered before meals, also potassium bicarbonate and sodium bicarbonate, each 10 grains, in a glass of cold water one hour after meals for eight days. This was followed by the administration of syrup hydriodic acid, half an ounce night and morning for a period of six weeks or longer.

When sinus surgery was done, daily packing of the nose was done with ten per cent hot silvol soaked cotton pledgets remaining one hour. This was repeated at one to three-

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day intervals for three or four weeks. Dietary and hygienic measures were enjoined.

In order to conserve space, we will make a brief mention of the history of each case.

Case 1. Thomas B., colored laborer, age 51, was first seen July 12, 1924, complaining of bumping into things so often as to interfere with his work. Physical finding were negative except for a slight albuminuria and a few casts, while both antrums were infected and four teeth were abscessed. Each antrum upon operation was found to contain a limited quantity of muco-purulent material which cultured the staphylococcus albus and micrococcus catarrhalis organisms. The teeth were also extracted. Fields measured on September 27, 1924, showed improvement. He died recently from angina pectoris. His gain in vision remained until his death.

Case 2. Colie S., age 19, a truck farmer, was first seen complaining of being afraid to drive his automobile, using his words, "the whole one side of me has been blind the last three days." His right eye had been blind and divergent since he was eight years old. He did not know why it became so. Physical findings were negative except infected tonsils and an impacted upper molar tooth (second) on each side. These were extracted. The ophthalmoscopic examination revealed retinal atrophy of right eye. The left eye showed retinal detachment on the nasal half. He was put to bed and given pilocarpine, sodium salicylate, and soft diet for two weeks. His tonsils were removed a month later.

His field measurement on March 19, 1924, showed partial reattachment. He has been under observation since and is holding his ground. He drives a truck to market daily.

Case 3. E. L. K., a mechanic, aged 64, was first seen September 28, 1924, complaining of blindness in right eye of four days duration. His physical condition was excellent, and his history good except a history of syphilis. He had been treated by an able genito-urinary physician and had had three negative Wassermanns, one year apart, since treatment had ceased, the last about two weeks before his coming to us. No lesion could be found on examination except two abscessed teeth. These being extracted, his vision began to return and he could tell a man from a horse in twenty-four hours. His blindness had disappeared by October 23rd. His gain lasted until his death last December.

Case 4. Maurice H., a salesman, age 28, came on March 21, 1925. "I notice things bump into me on my right side," is the way he expressed it. Physical examination revealed nothing except eight abscessed teeth. All were promptly extracted. His visual fields were well on to normal by May 3rd. His gain is permanent.

Case 5. Mrs. L. B. W., a housewife, age 34, first seen January 7, 1926. Her lesion was four abscessed teeth. Extraction of these caused rapid return of field to normal. She consulted us because she had had several automobile accidents from no other cause than she did not see objects approaching to her side.

Case 6. B. W. L., a farmer, age 50, first seen August 23, 1926, on account of blindness in both eyes since August 10th. His visual fields measured revealed double central scotomata, with some peripheral contraction. His focus was discovered to be in right antrum and both sphenoids, each of which were cleaned out, cultured separately, and were found to show staphylococcus albus in pure culture. A cloudy fluid was found in each sinus. His visual fields reached the normal by November 17th. His gain is permanent.

Case 7. Mrs. R. H. B., a farmer's wife, age 62, first seen February 5, 1925, complaining she had been unable to read or distinguish things directly in front of her for two days. Her visual field measurement revealed central scotomata with some peripheral encroachment. Her foci, according to physical findings, were in each antrum, culture showing staphylococcus albus. Both were operated. Her vision improvement was prompt, reaching normal by March 7th. Visual gain is permanent.

Case 8. H. S. R., a lawyer, age 52, first seen August 20, 1925. He had been unable to read for three days. His visual field measurement revealed central scotomata with peripheral encroachment. He had infection of each antrum. Culture was staphylococcus with some pneumococci. He was operated on and his improvement was rapid, as evidenced by the measurement made September 26, 1925. His general physical condition and history were good except he was an arrested tubercular subject. His vision and visual field kept good until his death one year ago from a diaphragmatic abscess—probably tubercular.

Case 9. Miss Annie F., a cashier, age 37, was first seen April 11, 1925. She had noticed that she was unable to read the morning paper, or see the articles of food at breakfast. She had a central scotoma with some peripheral encroachment in each eye. Both antrums were infected, and were operated, each culturing staphylococcus albus. On May 2nd her fields were normal. Her gain is permanent.

Case 10. Mrs. R. N. C., a housewife, age 49, was first seen January 5, 1926. She had been unable to read for three days. She had a central scotoma with peripheral encroachment in each eye. Her focus was the right antrum, which was operated, culture showing staphylococcus aureus, some catarrhalis, and a few pneumococci. Her fields became normal April 21st, the gain being permanent.

Case 11. J. J. H., a farmer, age 53, first seen September 2, 1925. He had complained of blindness in the left eye for the preceding two days. He had an eccentric scotoma in his right eye and a central scotoma in his left eye. His antrums were infected. Operation revealed stringy mucus which cultured staphylococcus albus. Visual fields were practically normal September 19, 1925. His gain is permanent.

Case 12. Arthur D., a colored laborer, age 38, first seen November 25, 1926. He had walked against a swinging beam which caused him to be knocked down. He had bumped into things very often for the past four days. His visual fields were contracted. His right frontal sinus, right posterior ethmoid, and right sphenoid were infected. Operation revealed yellow fibrinous exudate, which cultured pure staphylococcus aureus. His fields were normal January 3, 1927. His gain is permanent.

Case 13. G. P. S., a merchant, age 29 years, was first seen February 24, 1928. Awoke to find himself unable to read the paper. He had central scotoma in each eye with some marginal encroachment. His antrums were infected. Operation revealed muco-pus which cultured staphylococcus albus. His tonsils were enucleated, culture from which showed the streptococcus haemolyticus predominating. His fields became normal by March 11th, except an eccentric scotoma in the left field, which is permanent.

Case 14. J. W. R., a police chief, age 62, first seen October 31, 1929. He had, for the past four days, been unable to read the newspaper or drive his car. He had a large central scotoma, with marginal encroachment in right eye; there was a smaller scotoma in left eye. His antrums were infected. Operation revealed white muco-pus which cultured staphylococcus albus. His fields were normal December 2, 1929. His gain is permanent.

Case 15. T. T. E., a machinist, age 49 years, was first seen June 12, 1930 . An exception to the rule, he came seeking relief from pain which he had suffered for ten days. He had right frontal sinusitis, also infected tonsils. He had a contracted right field. The left eye was normal. His sinuses on operation, also his tonsils on enucleation, yielded frank pus, which cultured mixed organisms, the micrococcus catarrhalis predominating. His field was normal July 22, 1930. His gain is so far permanent.

Conclusions

1. Routine visual field mapping in cases of sudden impairment of vision is an important procedure.
2. When there is no pathology demonstrable by ophthalmoscopic examination, the blindness is toxic.
3. A thorough search should be made at once for the focus or foci, and remove the same.
4. A carefully prepared medical and dietetic procedure should be followed in order that the best results may be obtained.

3117 *West Avenue.*

Editor's Note:—Fifty-six visual field charts were shown with this paper.

THE OBLIGATIONS OF HOSPITALS TO INTERNS AND, RECIPROCALLY, THE OBLIGATIONS OF INTERNS TO HOSPITALS.

By GEORGE TULLY VAUGHAN, M. D., LL. D., F. A. C. S.,
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Let us consider first the obligations of hospitals to interns. The hospital management, the sisters or housekeepers, should see that the intern is provided with a comfortable room, bed, and proper food. The medical staff should treat the intern with consideration, not imposing upon him too much work, but instructing him as opportunity offers and giving him the chance to learn by assisting in operations and the management and treatment of patients. At the same time the intern should be held to strict account for the proper performance of the duties to which he has been assigned.

In turn the intern should obey the rules of the hospital and staff, especially the house-

keeping arrangements as to the time for rising in the morning, the hours for meals and the care of his quarters. He should be polite but not too familiar with the female nurses and at all times regulate his conduct so as to avoid all suspicion. The orders of the attending physician should be strictly carried out and no change made except in emergency and for good reason. When in doubt he should consult the man in attendance on the patient.

The intern should be loyal to his chief. If he has views contrary to those held by his chief let him so inform him but he should not put them into operation until he has received approval. An intern may be too enthusiastic, full of ideas and energy, eager to do things—even officious—or he may be just the reverse with no interest in his work, no ideas, just muddling along enough to keep out of trouble—perhaps too lazy to accomplish anything worth while. Neither of these men is ideal. The ideal should have enthusiasm, plenty of ideas, energy and desire to do things but he should also have the good sense and judgment to know just about how far it would be proper for him to go.

The intern should examine private as well as house cases and write their histories. It enlarges his field of usefulness, enables him to come into contact with the patient's family or friends and so to cultivate tact and diplomacy and learn how best to deal with the public. Conferences should be held frequently, at least once a month and preferably weekly, at which time the intern should read the history of one or more cases for discussion by the teachers and the interns. Stress should be laid on the more common or more frequent cases which the young practitioner is more likely to treat rather than the rare and unusual cases. A rotating service is best for the intern—so much time in the laboratory, in medicine, in surgery, and in obstetrics and gynecology. As to how much authority should be permitted the intern is largely a matter of judgment, but he should not do major surgical operations. After he has served his internship and has become a resident house surgeon or a fellow in surgery and has assisted experienced surgeons a reasonable time, then he may be trusted and even then for a while he should have the supervision of a competent surgeon. The question may arise as to what constitutes a major operation. Any operation that opens the abdominal cavity is a major operation. Some of the laity and even some physicians have called the operation for appendicitis a minor operation. It is impossible to foresee how extensive an operation for appendicitis may prove to be necessary. It may require excision of part of the intestine or present other complications with which the surgeon may be required to deal.

I have known more than one case in which the operator tore away the mesentery and blood vessels of the ileum and caecum to such an extent as to produce gangrene or require resection of that portion of the bowel deprived of its blood supply. I have known of a case in which the operator was endeavoring to remove an ovarian cyst and he had stripped the parietal peritoneum from the muscles on each side of his incision around almost to the vertebral column without opening the peritoneal cavity. These are some of the results of insufficient training and experience. Surely in these days of multi-science our young surgeons should not be required to emulate the celebrated ophthalmologist who is said to have declared that he had spoiled a hatfull of eyes before he succeeded in performing skillful operations. Now what can be done to prevent such tragedies? The layman is influenced by the reputation of the surgeon or guided by the advice of his family physician; and the latter, sad to say, is sometimes induced to make a choice of the surgeon who is most likely to divide his fee with him—having less regard for the welfare of the patient than his desire to profit by the commercial transaction. Therefore, the teacher must impress upon the young physician the true ethical spirit, not only to his brother physician but especially to his patient and by all means in his power by example and precept to aid him to qualify himself for these awful responsibilities. One method is to lengthen the time of study in medical school and hospital. According to the Council on Medical Education and Hospitals of the American Medical Association, eleven states require the completion of a five years' course in medicine before granting the diploma, and sixteen states, including Alaska and the District of Columbia, require the completion of a year's service as intern before being permitted to apply for a license to practice. The Latin proverb "*Poeta nascitur, non fit.*" (The poet is born, not made) may be true about poets, but it is not true about surgeons. It

is true, however, some men are born with a natural tendency or ability, which, with training and experience, makes them good surgeons or physicians—but the training and experience are necessary.

The intern may have in view his specialty while serving as intern but this should not prevent his giving faithful and conscientious attention to each of the rotating divisions in which he serves, for it gives him the foundation, the basis of the pyramid he is building, to be capped by his specialty. Next, he should enter some hospital or clinic in which his specialty holds a predominant place, where he can assist in operations and gradually perform them himself. After all, to obey the true spirit of medical ethics is to practice the Golden Rule—the hardest thing in the world to do.

When in a cynical mood, I have sometimes thought that all altruistic and philanthropic acts may be traced to self-love. The millionaire endows hospitals and libraries that he may be praised by the public, and the physician, the Christian, and the man who gives his life for another, probably expects some return or reward in this life or at any rate in the life to come—"laying up treasures in Heaven." If all men, doctors included, and especially lawyers, would follow the Golden Rule by precept and example, there would be no need for police or military forces; human society would be one vast brotherhood and a thousand years of peace, the millennium, would indeed have arrived.

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DIABETIC COMA AND THE GENERAL PRACTITIONER.*

By G. HUNTER WOLFE, M. D., Abingdon, Va.

Prior to April 15, 1929, the statistics of the Metropolitan Life Insurance Company showed 1,044 deaths resulting from diabetes mellitus; of this number 433 (41 per cent) were due to coma. Although the general treatment of diabetes has unquestionably improved in every way in the past seven or eight years, still coma with or without infection remains as a common cause of death in this disease. Facts prove that diabetic coma is a needless complication of diabetes and that it can be abolished. What then can we, as general practitioners, do toward lowering this death rate? As the family doctor we are under definite obligation to our diabetic patients. Because of the nature of diabetic coma, we are the first, in the majority of instances, to be called when an emergency arises. We have a great opportunity to diagnose diabetic coma in its early stages and thus prevent its development. If it does arise, it is usually due to neglect or ignorance on the part of the patient, or the physician, of the simplest rules of medical treatment.

Causes Contributing to Diabetic Coma

(1) Joslin[1] makes the following statement: "Coma comes from over-eating either of food or one's own body. Overeating of food is usually the result of breaking the diet, but not always is this true today. The modern diabetic who takes insulin is always overeating, so far as his own capacity is concerned, and as soon as insulin is omitted he is liable to coma. Therefore, no insulin diabetic should omit insulin unless sugar-free and insulin should be resumed when sugar returns. Even if the insulin diabetic takes no food, he should not omit insulin unless sugar-free and should be ready to resume it if the glycosuria recurs, as demonstrated by four, six, or eight hour tests of the urine. The diabetic with fever, the diabetic with hyperthyroidism, is overeating because his metabolism is raised. This is one of the explanations of the high mortality from coma when influenza is prevalent. But coma should not be so prevalent, because with insulin at frequent intervals it could have been prevented. The overeating may not be extreme. All of us recognize that acidosis results in children if they go long without food and drink and formerly often occurred as a result of operation. Acidosis even in normal children was a dread cause of death. Today the acidosis in normal children is anticipated or, if it develops, is dispelled by giving carbohydrate foods in one form or another. So too, with the diabetic; his acidosis may occur because he has no carbohydrate to burn and lives to excess upon protein and fat wholly apart from his diminished power to oxidize carbohydrates. It is still a sad commentary upon the inauguration of the medical treatment of diabetes that occasionally the carbohydrate in the diet is sharply restricted and the patient is given unlimited freedom in protein and fat."

(2) Acute infectious diseases complicating diabetes frequently result in coma; in fact any diabetic with an infection is a candidate for

*Read before the Southwestern Virginia Medical Society, in Wytheville, March 19, 1931.

coma. In any disease that causes a rise of temperature, the insulin dose should be increased because in the presence of fever the effect of insulin is considerably reduced.

(3) One should always be on the alert for coma in diabetics who develop gastro-intestinal troubles accompanied with loss of appetite, in elderly patients with damaged kidneys, cases of pregnancy, operative cases, physical pain and overstrain, and depressive psychic conditions.

(4) Neglect or ignorance on the part of the patient or physician. I believe that this can be considered the most frequent cause of diabetic coma. The only way this cause can be abolished is through the efforts of the general practitioner. If the death rate of diabetic coma is to be reduced, it is incumbent upon him to carefully instill into the mind of his diabetic patient the importance of always carrying out his instructions to the letter; to impress him with the common contributing causes, dangers and early symptoms of coma, and the importance of frequent, stated re-examinations of urine. During office visits the patient should be reminded of previous instructions and encouraged to "carry on."

As to the part that the physician plays in the incidence of coma, I believe neglect is the most outstanding. This probably should not be called neglect, because during the winter months especially we have more calls to make than we can during a day; the time allotted to a patient is short; we do not have time to think over the possibilities and, therefore, overlook a beginning coma instead of neglecting it. As examples of the above statement I wish to cite the following cases:

During the past two months I have had the opportunity of seeing two patients in diabetic coma after they had been admitted to a hospital. Both were known by their respective family physicians to be diabetic. One began complaining of pain in the upper left abdomen, shortly became nauseated and vomited. Her physician was called, some medicine was prescribed, but she gradually became more stuporous and finally comatose. Her physician was called again but it was twelve hours after coma developed before treatment was started. Blood sugar was 606 mg. per 100 c.c. of blood; gross sugar, acetone and diacetic acid in urine; very noticeable fruity odor of breath; air-hunger type of breathing. Patient died six hours after treatment was started. Unfortunately, urine analysis was not done until after patient was admitted to hospital.

The second patient began complaining of pain in his arms, his physician was called, he was given some medicine for neuritis, the pain continued, his appetite failed, thirst and frequent urination gradually increased. Four days later he became nauseated and began vomiting; this increased in severity until two days later he became drowsy and all his symptoms gradually increased. Two days later he was brought to hospital in a pre-comatose condition. A hypodermic of morphine was given, before starting to hospital, to control vomiting, when 30 units of insulin would have been the proper medicine. Urinalysis was never done, though his physician made four or five visits. The pain in his arms had disappeared completely when he regained consciousness. What was the cause of these two patients going into coma? The patient's ignorance or neglect, or an oversight on the part of the family doctor? If the physician in charge of each case had spent three minutes in doing the simple test for sugar in the urine and acted accordingly, what would it have meant to the patient? Life for one, and saving a large hospital bill for the other.

Ordinarily we can classify these patients as pre-comatose or actually comatose. This classification is important in the early treatment of coma as the first dose of insulin is determined by the extent of coma. In a true case of coma the initial dose of insulin should be from 30 to 50 units, while in a pre-comatose state 20 to 30 units may be sufficient. Another reason for classifying the extent of coma is that the power of insulin to reduce blood sugar diminishes as the extent of coma increases. If we are able to get a blood sugar determination, the above is not so important. If this cannot be had, by using 1 c.c. of Benedict's solution and two drops of urine for each test, one can very well watch the clinical improvement of the patient and also determine in the majority of cases if the blood sugar is decreasing by the reaction obtained in the urine.

A patient I was asked to see recently proves that there are exceptions to all rules. Her condition was as follows: Vomiting of three days' duration, stupor fifteen hours, marked air-hunger, skin dry, flushed face, parched tongue,

subnormal temperature, gross cardiac arrhythmia; practically a true coma at 2:00 P. M. Urine (catheterized specimen) Sp. g. 1.015, acid, albumin 2 plus, sugar 4 plus, acetone 4 plus, diacetic acid 4 plus. Blood sugar at 2:30 after 20 units of insulin 298 mg. per 100 c.c. of blood. At 8:15, 80 units of insulin had been given; urine Sp. g. 1.015, sugar 1 plus, acetone 2 plus, diacetic 1 plus; blood sugar 393 mg., deep coma, temperature 102.6. At this time 40 units of insulin was given intravenously because the clinical picture showed that she was not improving. At 2:00 A. M. 140 units of insulin had been given. Urine negative, blood sugar 110 and patient fairly rational; 10:30 A. M. not so rational, blood sugar 160 mg., urine sugar 2 plus (yellow reaction), acetone 1 plus, diacetic acid neg. Sp. g. 1.015. I wish to call your attention to the fact that here the urine picture was not a true index of the blood sugar level or clinical condition of the patient; also there is a fixed specific gravity and a low specific gravity. Ordinarily in diabetes the specific gravity of the urine is high. One author states that he has never seen this condition except when a patient had a kidney complication.

Regarding the differential diagnosis, only two phases will be discussed:

(1) The differential diagnosis between diabetic coma, or acidosis, and an acute abdominal emergency. This is by no means simple, especially in a patient bordering on diabetic coma, with abdominal pain, nausea and vomiting. In both conditions there may be, and usually is, an elevated white count, certain amount of shock, fever or subnormal temperature. If we remember that a diabetic bordering on coma may have pain in any part, elevated or sub-normal temperature, a flushed face, air-hunger, nausea and vomiting, soft eye balls and stupor, we should, on general principles, assume that this patient with sugar in the urine is a potential victim of coma rather than appendicitis, pleurisy, neuritis or rheumatism. Insulin, not morphine, will not only relieve the pain, but save the patient's life. A competent surgical consultant will give the necessary moral support if the pain be abdominal.

(2) Diagnosis of insulin shock from diabetic coma. Joslin[2] states that "insulin like any other drug has its dangers; the most important is an over-dose." Deaths have occurred due to over-dose. He thinks that these occur chiefly because of confusion in the diagnosis of insulin shock from diabetic coma and gives the following as a differential diagnosis:

"Coma (acid poisoning) comes on slowly; insulin shock rapidly. Coma is due to too much food (diet or fever); insulin shock to too little. The coma patient has received too little insulin; the other too much.

"In coma an infection is common, in shock is rare.

"In coma thirst, hunger, nausea, vomiting, pain in abdomen, and fever are usual, but are rare in shock.

"In coma the skin is dry, in shock moist.

"In coma the vision is dim, in shock may be double.

"In coma the patient appears extremely ill, in shock weak and faint.

"In coma the respiration is exaggerated, in shock normal.

"In the onset of coma the patient is restless while approaching unconsciousness, while in shock he is excited.

"In coma the urine shows sugar and diacetic acid, in shock the urine may show sugar, but a second specimen, representing recently secreted urine, is sugar free.

"In coma the response to treatment is slow, in shock it is rapid with carbohydrates by the mouth, rectum or intravenously."

Since the early treatment of diabetic coma is so important in the final outcome, the more important and generally accepted methods of treatment should have a widespread distribution.

The chief purpose of treatment according to Allen[3] is the prevention of the production of acetonemia or its disappearance if it already exists. After this is accomplished, the main object, is the maintenance of good nutrition, so that the patient may feel well and strong. Also, the treatment should protect him from the occurrence of complications and must be planned to prevent progress of the disease and encourage recovery if possible. "Treatment may be considered successful if the patient feels well, the desired weight is held, and the urine is kept sugar-free. To achieve these objects, dietary measures are always necessary. Treatment by insulin does not take the place of dieting but supplements it. Sometimes insulin is used with little, if any, care of the diet. Everyone who has had experience with

diabetes agrees that such practice is always unwise and often dangerous. Without thorough treatment of the disease to keep the urine sugar-free, patients rarely have full strength and vitality, although there are some who may have fairly good health."

In discussing the treatment I will endeavor to make it applicable to home treatment. Everyone agrees all severely ill diabetics should be sent to a hospital if possible. If the diagnosis of pre-coma or coma is suspected, this can be ascertained fairly well if we carry a catheter, test tube, and a small amount of Benedict's solution. A red reaction indicates a 4 plus sugar, yellow reaction a 2 plus, and a green reaction 1 plus. If the worst happens and coma develops, what should be done? It is very important that treatment be started as soon as possible, a few hours delay may defeat the results that we are striving to obtain, saving the life of our patient. Here again I wish to remind the practitioner that life or death in the majority of cases of patients going into diabetic coma depends on the physician's alertness in recognizing the condition and beginning treatment at once. The patient should be given 30 units to 50 units of insulin hypodermically. If the patient is being sent to a hospital, the insulin should be given before placing him in the ambulance. If kept at home, or after entering the hospital, the following plan should be carried out:

Put the patient to bed, keep him warm by using blankets and applications of external heat, immediately give an enema of warm salt solution. If there is much nausea and vomiting, and especially pain in the upper abdomen, it is good practice to empty the stomach by a gentle gastric lavage. This may also prevent the formation of gas and an acute dilatation. In giving this lavage we should remember that the heart of the patient is very weak.

If heart action is irregular and very weak, or the circulation poor, digitalis should be given, or caffeine sodium benzoate administered in 7½ gr. doses every two or three hours as necessary, until three or four doses have been given. The two drugs can be alternated.

Nourishment is necessary for the coma patient. So often is the digestion disturbed that the greatest care must be taken in its adminisration. Hot liquids are given by mouth at a rate not exceeding a glassful an hour. Coffee, tea, orange juice, water and oatmeal gruel are suitable. Carbohydrates are indicated, easy to give, and better tolerated by the stomach. Fifty grams the first twenty-four hours are usually sufficient. At times it may be necessary to give this as glucose by proctoclysis or intravenously. If given intravenously, either a 25 or a 50 per cent solution should be used every three or four hours as necessary, in amounts not exceeding 150 c.c., as the danger of overloading the circulation is always to be thought of. From 3,000 to 4,000 c.c. of fluid in twenty-four hours is usually needed.

There has been considerable controversy among authorities on diabetes concerning the administration of alkalies in this condition. Joslin opposes it, particularly large doses. On the other hand, Allen urges their use. If the patient does not begin to show improvement in the Kussmaul type of respiration, and urine shows a decrease in acetone and diacetic acid by the end of eight or ten hours of treatment, I believe it advisable to begin alkalies. The frequency of dose should be guarded by the extent of air-hunger and by the urine, which should be kept neutral or slightly alkaline.

Insulin: The insulin requirement is variable and differs in practically every case. As a rule, it is given every one to two hours. The initial dose is from 30 to 50 units and, of course, is given immediately after diagnosis. Subsequent doses depend upon the results of re-examination of the blood and urine. By inserting a catheter and holding it in place with adhesive, a specimen of urine should be examined every two hours, before the next dose of insulin is given. The size of the dose is governed by these tests and the clinical condition of the patient. With a rapidly falling sugar in the urine and a definite clinical improvement, insulin should be reduced, or delayed, and thus avoid a hypoglycemia.

The first two or four days following recovery from coma is a critical period. Urinalysis should be done every four hours and a very good rule to follow is to give 15 units of insulin if the Benedict's test gives a red reaction, 10 units if a yellow reaction, 5 units if a green reaction, and no insulin if sugar-free. The original diet is resumed gradually; usually the second day a diet consisting of liquids and soft foods, C. 50 grams, P. 25, and F. 25 is safe. This is increased until the desired

number of calories is reached as determined by the basal caloric need. One should always remember that 45 per cent of proteins and 90 per cent of fats are converted into fatty acids; 55 per cent of the proteins, 10 per cent of the fats and all of the carbohydrates provide glucose. A diet should not be given where the fatty acids are twice as much as glucose.

If the patient has been treated at home, as soon as possible he should be taken to a hospital, where the correct dose of insulin suitable to that particular patient can be determined by doing blood sugars. Blood sugar determination should be repeated every month for some time, and urine tested for sugar every week.

The physician should instruct his patient that any time he develops infection, or feels abnormal in any way, he should carry out the rules Joslin teaches his patients, which are "(1) go to bed, (2) keep warm, (3) get an attendant, (4) drink a glass of liquids each hour, (5) for nourishment depend on water, orange juice and oatmeal gruel, (6) send for your physician." The responsibility then rests solely upon the physician.

In conclusion, the high incidence of preventable deaths from diabetic coma presents a challenge to the general practitioner His clinical alertness and ability to educate his diabetic patients in the simple fundamental matters of dietary importance and cooperation will determine whether the estimated one million diabetics in the country will die prematurely or live their expected span of years.

References

1. Joslin, Elliott P.: *Indiana State Medical Journal*, 23:57-63 (February), 1930.
2. Joslin, Elliott P.: *New York State Journal of Medicine*, 30:1461-1464 (December), 1930.
3. Allen, Frank N.: *Southwestern Medicine*, 14:512-517 (November), 1930.

THE PROGNOSIS IN ECLAMPSIA.*

By M. PIERCE RUCKER, M. D., Richmond, Va.

I crave your consideration of 204 cases of eclampsia that have come under my observation in the past twenty-seven years, from the standpoint, first, of immediate risk to the mother, and second, the effect upon her subsequent health and childbearing. These cases are all true eclampsia, i. e., the convulsive type of toxemia of pregnancy. Unless the patient had at least one convulsion that was seen by a competent observer, the diagnosis of eclampsia was not made. I dwell upon this point because my last publication upon eclampsia,[1] "The Treatment of Eclampsia with Magnesium Sulphate," was criticised by a Philadelphia author[2] as follows: "In thirty-six of these treated with $MgSO_4$ he had no deaths, while in ten treated otherwise he had two deaths. I have read through Rucker's cases and there are no records of actual convulsions, and I wonder whether some of his cases may have been pre-eclamptic or uremic, thus explaining his results." This author evidently did not refer to the original article for a synopsis was given of each case with the kind of convulsions, whether ante-, intra- or postpartum, together with the urinary findings, blood pressure, etc.

In this study I have coded the cases for convenience of presentation. The cases are derived from three sources: (1) private cases, (2) cases on the student service of the Medical College of Virginia when I was in active charge of the out-patient department, and (3) cases that occurred when I was on service at the St. Philip Hospital. They are arranged chronologically not only to avoid duplication, but also to show more graphically the varying method of treatment with the years. Eighty cases taken at random from about the middle of the series were graded according to Eden's classification[3] and twenty were found to be of the severe type.

The cases fall roughly into three groups. With the first group, the main idea in the treatment was to deliver the patient as rapidly as possible—accouchement forcé was the sheet anchor in the treatment although towards the end of this period use was made of Cesarean section. In the second group the main reliance was put upon morphine, colonic irrigations, venesection, gastric lavage, and purgation. This was a more conservative period, but still the patient was pestered almost continuously in one way or another. In the third group, which begins with the advent of the intravenous use of magnesium sulphate, I had three concerns: (1) to stop the convulsions, (2) to promote kidney activity, and (3) to prevent heart failure. When the patient is having convulsions, not only does she fail to get the necessary rest, but her attendants are stimulated to unwarranted therapeutic activity. Magnesium sulphate has in my experience quickly controlled the convulsions in the great

*Read before the Richmond Academy of Medicine, January 13, 1931.

majority of cases. Sodium amytal intravenously and avertin by rectum are also said to be highly efficacious but I have had no experience with either in eclampsia. Water, either through a nasal tube if the patient be unconscious, or by mouth if she can swallow, accomplishes the second indication. Large doses of digitalis meet the third requirement.

A word of explanation of the code. Each horizontal line represents a patient. The first vertical line gives the race, "1" denoting white and "2" colored. The unmarried patients are indicated by "x." The age of the patient is given in the next column. If the patient had had eclampsia previously, it is indicated by "y" in this column. The number of previous children and abortions are given in the next two columns, and the condition of the heart, lungs, and the blood Wassermann in the next three columns. In the column headed blood pressure, "2" denoted a systolic pressure between 100 and 149, "3" a systolic pressure of from 150 to 199, and "4" a systolic pressure above 200. In the column for the urine "1" indicates normal, "2" a trace of albumin, "3" a quantity of albumin, "4" sugar, and "5" casts. The character of the pelvis is given in the next column. "2" means a justo-minor

ECLAMPSIA HISTORIES, CODED

GROUP I

Color and Condition	Age	Children	Abortions	Heart	Lungs	Wass.	Blood Pressure	Urine	Pelvis	Attendance	Total Duration	Duration 2nd Stage	Presentation	Operation	Anesthetic	Perineum	Days in Bed	Placenta	Complications	Cond. of Mother	Cond. of Child	Length of Child
1x	18	0	0	....	....	....	....	....	....	3	....	....	....	10	0	0	7	....	1	3	4	x
2x	18	0	0	....	....	....	....	....	....	3	11	15	2	30y	3	1	1	0x	1	4	6y	28x
1	....	0	0	....	....	....	....	....	....	3	1	15	....	30y	3	1	....	....	1x	3	3x	....
1	36	2	1	....	....	....	....	....	....	3	7	....	2	10	3	....	9	....	11	3	6	x
1	34	3	0	....	....	....	....	....	....	3	....	....	2	1y	3	....	53	....	1x	3	3x	....
2	37	4	....	....	....	....	....	....	....	3	1	....	2x	1y 1	3	....	....	7	1	4	3 6	...
2	24	0	0	....	....	....	....	....	....	3	....	....	2	20	3	0	....	....	1	3	3y	....
2	24	....	....	....	....	....	....	....	....	3	....	....	1	20	3	1	....	....	1	3	6y	....
1	19	0	0	....	....	....	....	....	....	3	....	....	....	10	0	....	....	0	1	3	....	....
2	30	....	....	....	....	....	....	....	....	3	17	....	4	30	3	0	9	0	1	3	3x	....
1	23	....	....	....	....	....	....	....	....	3	8	....	2	1y	3	....	9	0	1x	3	6x	....
1	33	0	0	....	....	....	....	....	....	3	33	30	2	30	3	0	....	0	1	3	3	....
1	26	0	0	....	....	....	....	3	....	3	....	20	2	30y	3	2	17	0	1x	3	6	x
1	19	0	0	....	....	....	....	....	....	6	1	30	....	30y	3	0	....	....	1	3	3x	....
2	20	0	0	....	....	....	....	....	....	1	....	....	....	....	0x	....	1	....	1	4	....	....
2	29	7	1	....	....	....	....	....	....	3	13	x	7x 2	10	0	0	7	0	1	4	3x 3y	48 47
1	27	0	0	0	0	....	....	....	....	1	....	....	....	30	....	2	18	....	1	3	....	....
1x	20	0	0	0	0	0	2	....	1	1y	9	85	2	10	3	1	....	0x	1	3	3x	48
1x	16	0	0	....	....	....	....	....	....	1	....	....	....	30	....	....	46	....	1x	3	....	....
2	17	0	0	....	....	....	....	....	....	6	1	....	3	30y	....	0	1	....	1	4	3x	....
1	20	0	0	....	....	....	2	2	....	5	....	....	....	10	....	....	....	....	1	3	3	....
1x	17	0	0	....	....	....	3	3	....	1	....	....	....	60	4	0	1	0	1	4	1	....
1	21	0	0	....	....	....	3	3	....	3	....	....	....	10	....	....	....	....	1	3	....	....
2x	13	0	0	0	0	....	4	....	....	3	8	....	x	10 30	...	0 0	1	....	1	4	6 3x	x x
2x	21	0	0	....	....	....	4	....	....	1	5	....	....	10	0x	....	....	....	1	3	7x	x
1	17	0	0	0	0	....	....	....	....	1x	21	y	1	20	3y	1	9	0	1	3	3y	....
2	31	0	0	0	0	....	3	....	....	1x	....	....	....	61	4	0	....	0	1x	2	2y	x
1	....	....	....	....	....	....	3	....	....	1x	....	....	2	67	3	0	0	....	1	4	6y	....
1	17	0	0	....	....	....	3	....	....	1x	....	....	1	40	3	....	1	....	1	4	6x	....
1	33	6	0	0	0	0	3	....	....	1x	....	....	1	60	1	0	....	0	1	3	7	x
2	22	0	0	0	0	....	....	....	....	3x	4	45	2	10	3	1	9	0y	1x	3	3y	....
1	....	....	....	....	....	....	....	....	....	1x	....	....	....	20	....	....	....	....	1	4	3x	....
1	19	0	0	....	....	....	....	....	....	1x	27	90	2	22	3	....	9	0x	1	3	7	....
2	22	1	0	0	0	....	....	....	....	1x	21	y	2	20	....	....	9	0x	1	3	2x	....
1	27	....	....	....	....	0	3	5	....	1x	....	....	7	60	4	0	....	0	1	3	3	x
1	29	y	....	....	....	....	3	5	....	1x	....	....	....	60	4	0	....	0	1	3	6	x
1	19	0	0	....	....	....	4	5	....	6	....	....	7	6x	3	....	1	....	1	4	....	x
1	36	0	0	0	0	....	2	3	....	3	....	....	....	1y	0	....	4	....	1	4	6	....

ECLAMPSIA HISTORIES, CODED

GROUP II

Color and Condition	Age	Children	Abortions	Heart	Lungs	Wass.	Blood Pressure	Urine	Pelvis	Attendance	Total Duration	Duration 2nd Stage	Presentation	Operation	Anesthetic	Perineum	Days in Bed	Placenta	Complications	Cond. of Mother	Cond. of Child	Length of Child
1	20	0	0	0	0	....	3	....	....	1x	....	....	2	10	0	....	1	0y	1	4	7	....
1	20	0	0	0	0	0	3	....	....	1x	....	....	2	20	1	1	9	0	1	3	3	....
2x	17	0	0	0	0	0	2	....	....	1x	18	90	2	30	0	0	....	0	1	4	3y	....
1	22	0	0	0	0	....	....	....	....	3x	3	....	2	2	4	1	....	0y	1	3	3x	....
1	....	0	0	5	....	....	....	....	....	3	....	....	....	20	....	....	....	0	1	3	3	....
1x	20	0	0	....	....	....	....	1	....	1	11	....	2	30	4	1	....	0	1	3	3	54
2x	....	....	....	....	....	....	....	....	....	1x	....	....	....	40	....	....	....	....	1x	4	6	....
2x	17	0	0	0	0	....	3	....	1	4x	....	....	....	10	0	0	9	0	1	3	3y	48
1	18	0	0	....	....	....	3	1	....	5	....	....	....	10	....	....	....	....	1	3	3	....
1y	28	0	0	0	0	....	2	....	5	3	11	y	3	2	3	2	3	0	1	4	3y	53
1x	21	0	0	0	0	0	3	1	1	1y	....	60	2	30	4x	1	10	0	1	3	3y	48
1	27	2	....	0	7	....	2	2	....	5	....	....	....	10	....	....	7	....	1	4	3	....
1x	16	0	0	0	0	....	3	....	....	1x	....	....	1	10	....	....	10	0x	1	3	3y	50
1x	18	0	2	0	0	0	2	....	1	1y	37	5	3	2	3	0	9	0	1	3	3y	48
1	42	1	0	0	0	4	4x	2	1	1y	5	35	2	30x	0x	0x	....	0y	1	3	7x	50
2	....	....	....	0	0	....	4	....	....	1	30	....	2	40	....	2	5	x	1x	4	3x	....
2	17	0	0	0	0	4	....	....	1	3x	13	y	3	10	0x	0	9	0	1	3	6y	49
2	20	0	0	0	0	....	....	....	....	1	10	....	2	20	4	2	....	....	1x	3	7x	45
1x	19	0	0	0	0	0	2	1	1	1y	9	y	1	20	4x	2	....	0	1	3	3y	49
2	19	1	0	0	....	....	....	1	....	1	....	....	7	....	0x	....	1	....	1	4	....	....
1x	17	0	0	0	0	0	2	1	5	1	10	10	4	2y	0x	0	3	4x	1	3	6y	53
1	25	0	0	0	0	0	3x	3	2	1y	14	10	3	2x	3x	0	16	4x	1	3	3y	49
1	21	....	....	....	....	....	3	3	....	6	21	....	2	30	3	2	3	4y	1	3	3x	52
2	25	1	2	0	0	0	3	2	1	1	1	5	1	10	....	0	15	....	1	3	7y	46
2x	19	0	1	0	0	0	3	1	5	1xy	7	....	2	10x	0	0	9	0y	1	3	6y	x
1x	19	0	0	0	0	0	2	....	1	3	17	....	2	10	3	2	9	0	1	3	3x	55
1	36	0	0	0	0	0	....	5	....	5	....	....	....	30	....	2	28	....	1	3	7	....
2	24	1	0	0	0	0	2	3	1	1y	....	....	....	2x	3	x	....	....	1	3	3x	x
2	26	0	0	0	0	0	3	5	....	3	....	....	....	10	0	....	....	....	1	3	3	....
2	19	0	0	0	7	0	3x	....	....	1	....	....	....	10	0	0	....	4	1	3	4	....
2	21	0	0	0	0	....	3	3	....	1	16	....	2	20	0x	0	....	4	1x	3	3y	53
1	28	y	....	....	....	0	....	2	....	1	2	....	1	2x	3	0x	....	....	1x	3	3x	....
2	30	2	0	0	0	....	3x	....	....	1	....	....	....	....	x	....	1	....	1	4	....	....
2x	13	0	0	0	0	0	3	2	1	1y	....	....	....	10	....	1	21	....	1	3	3y	....
1	17	0	0	....	....	....	3x	5	....	1	15	10	7	6x	4x	1	....	0x	1x	3	7y	44
1	25	1	0	0	0	0	2x	1	1	1y	22	7	1	2x	4x	0	5	4x	1	3	3x	52
2	17	....	....	....	....	....	2	5	....	3	....	....	....	10	....	....	....	....	1	4	6	....
1	26	0	0	1	0	....	3x	2	1	1	2	10	1	20x	4x	0	....	0	11	3	3	39
2	35	....	....	....	....	....	....	....	....	1	....	....	....	10	0	0	7	0	1	4	4	28
2	26	1	0	....	....	....	3	5	5	1	....	....	....	10	2	....	1	....	1	4	....	....
2	17	0	0	....	....	0	....	5	....	1	7	....	2	10	....	0	2	....	1x	4	4x	....
2	35	0	0	0	0	....	3	....	1	1	....	....	....	....	....	0	1	....	1	4	....	....
1	37	5	....	....	....	....	5x	5	....	1	....	....	....	....	....	....	1	....	1	4	....	....
1	27	0	1	0	0	....	4	....	1	1	10	10	3	2x	4x	0	....	4y	1	3	3y	46
1	22	0	0	....	....	....	1	3	....	2	....	....	....	10	0	0	6	....	1	3	7	x
2	19	0	0	....	....	0	3	5	....	1	....	....	....	10	0x	....	....	....	1	3	7	....
1	29	4	4	1	0	1	2	1	1	5y	....	....	....	8	....	0	....	....	1	3	6	x
2	28	1	3	0	0	0	1	....	1	3xy	5	5	2	10	0	0xy	9	0y	1	3	3y	48
1	38	0	0	....	....	....	3	....	....	1	54	30	4	10x	0xy	0	16	4y	1	3	6y	45
1	27	0	0	....	....	....	3	2	....	1y	25	20	1	34	8x	1	14	4y	1x	3	3y	48
1	25	0	1	0	1	....	3	1	....	5	....	....	....	12	3	0	....	0	1	3	3	....
1	24	0	0	....	....	....	4	....	....	1	15	10	1	30x	8x	0	4	4y	1	3	3y	35
2	38	0	0	0	0	0	....	....	....	1x	9	90	2	10	x	0	9	4y	1	3	3y	49
2	22	1	0	0	0	....	2	....	1	1y	....	....	....	60	....	xy	8	0	1	3	3x	49
2x	17	0	0	0	0	0	2	5	1	1	8	10	2	20	8	2	18	0y	1	2	6x	54
2x	20	0	0	7	0	0	4	5	....	1x	....	x	2	30	4	4	3	0x	1	4	6x	46
2	40	6	0	....	7	....	3x	5	....	1	9	....	....	10	x	1	....	4x	1	3	y	x
1	24	0	0	....	....	....	3	5	....	1	....	....	....	10	0x	....	....	....	1	3	3y	....

ECLAMPSIA HISTORIES, CODED

GROUP III

Color and Condition	Age	Children	Abortions	Heart	Lungs	Wass.	Blood Pressure	Urine	Pelvis	Attendance	Total Duration	Duration 2nd Stage	Presentation	Operation	Anesthetic	Perineum	Days in Bed	Placenta	Complications	Cond. of Mother	Cond. of Child	Length of Child
2	18	0	0	....	....	....	2	5	....	1	....	....	....	10	0x	....	....	....	1	3	7y	....
2	22	0	0	....	....	....	2	2	....	1	....	....	....	10	0	....	....	....	1	3	3	....
2x	16	0	0	0	0	0	3	0	1	1	10	....	2	10	0	0	8	4y	1	3	6x	48
2x	29	3	0	1	0	0	4	5	....	1xy	....	y	....	10	0x	1	11	4x	1	3	3y	51
2x	18	0	0	1	0	0	3	5	....	1x	10	75	1	14	8	1	9	4x	1	3	6y	44
1	22	0	0	....	....	....	4	3	1	1	12	15	4	20	5x	2	9	4x	1	3	7x	50
2x	17	0	0	1	....	0	2	1	5	1y	....	....	2	....	....	1	....	4y	1x	3	7x	51
2x	19	0	0	....	....	....	3	5	....	1	....	....	....	10	0	....	....	....	1	3	6y	....
1	22	0	0	0	0	0	2x	1	1	3	....	....	....	10	....	....	....	....	1	3	3x	....
2	19	0	0	....	....	....	3	5	....	1	....	....	8	2	....	....	....	....	1	3	6x	....
2x	17	1	0	1	0	0	3	3	1	1x	....	....	2	10	1	0	19	0x	1	1	6x	51
2	17	0	0	....	....	....	3	1	....	3	....	....	....	....	....	....	....	....	1	3	....	....
2x	19	0	0	0	0	....	3	1	....	4	....	....	....	10	0	2	8	....	1x	3	3x	....
2	17	0	0	....	....	....	4	5	....	1	....	....	....	10	0x	....	....	....	1	3	6	....
1	38	6	0	0	0	....	3	3	....	1	16	y	2	10	4	0	12	4	1 3	3	6y	48
1	23	0	0	0	0	....	4	3	....	1	13	....	2	30	0x	1	....	0x	1	3	6x	55
1	19	0	0	....	....	....	....	5	....	1	....	....	....	60	5	0	....	....	1	3	3	....
2	36	4	0	....	....	....	4	5	....	1	....	....	....	14	0x	....	....	....	1	3	6	....
1	36	y	....	....	....	....	4	5	....	1	....	....	....	10	0x	....	1	....	1	4	6x	....
1	25	0	0	....	....	....	....	2	....	1	....	....	....	20	....	....	....	....	1	3	3	....
2	18	0	0	....	....	....	2	5	....	1	....	....	....	10	0x	....	....	....	1	3	6x	....
2	21	0	0	....	....	....	2	5	....	1	....	....	....	10	0x	....	....	....	1	3	3x	....
1	29	7	0	0	0	....	3	....	....	1	5	20	2	10	4	0	....	4x	1 3	3	3x	44
2	20	0	0	0	0	....	....	....	....	5	....	....	....	30	....	0y	....	....	1	3	....	....
2	19	0	0	0	0	0	3	5	....	1	7	....	8	2	4	0	8	4y	1	3	3	56
2	18	0	0	....	....	....	3	5	....	1	....	....	....	10	0x	....	....	....	1	3	7x	....
2x	21	0	0	....	....	....	4	5	....	1	....	....	....	10	0x	....	....	....	1	3	6	....
2	36	y	....	....	....	....	4	3	....	1	....	....	....	10	0x	....	....	....	1	4	6x	....
1x	17	0	0	0	0	0	3	....	1	1y	17	....	2	10x	0x	0y	7	4x	11	3	6y	46
2	21y	1	0	1	0	0	2	....	....	1y	....	....	....	....	....	....	....	....	1	3	....	....
2	18	0	0	....	....	....	....	....	....	1	3	10	7x 1	10 10	0	1	....	x x	1	3	3 3	47 46
1	19	....	....	....	....	0	....	5	....	1	6	2	2	2x	4x	0	....	0y	1	3	3	51
1x	16	0	0	....	....	....	3	5	....	3	....	....	....	....	....	....	....	....	1	3	....	....
2	22	0	0	....	....	....	4	5	....	1	....	....	....	14	0x	....	....	....	1	3	6	x
1	17	0	0	....	....	....	3	5	....	3	....	....	....	10	....	....	....	....	1	3	3	....
1	18	0	0	....	....	....	3	5	....	1	9	x	1	20x	8x	0	....	4y	1	3	3x	43
1	21	1	0	1	0	0	2	3	1	1y	9	32	1	10	....	1	5	0y	1	3	3y	48
2	22	0	0	....	....	....	2	5	....	1	....	....	....	10	0	....	....	....	1	3	6	....
1	36	y	....	....	....	....	3	5	....	3	....	....	....	....	....	....	....	....	1	3	....	....
1	18	0	0	....	....	....	2	5	....	1	....	....	....	10	0x	....	....	....	1	3	3	....
2x	17	0	0	....	....	....	3	....	....	1	....	....	....	10	0x	....	....	....	1	3	3	....
2	40	y	....	....	....	....	3	5	....	1	....	....	....	10	0x	....	....	....	1	3	6	x
1	21	0	0	....	....	....	....	....	....	1	7	15	2	2x	8x	0	....	4x	1	3	3y	....
2	35y	y	....	....	....	....	3	5	....	1	....	....	7	6x	....	....	....	....	1	3	3	x
1	17	0	0	....	....	....	3x	5	....	1	....	....	....	30	....	....	....	....	1	3	3	....
2	17	0	0	....	....	....	4x	5	....	1	....	....	....	10	0x	....	....	....	1	3	3	....
1	20	0	0	....	....	....	3	5	....	1	....	....	....	10x	0x	....	....	....	1	3	6	....
1	38	0	0	0	0	....	3	5	....	1	....	....	....	10	0	0	26	0	1x	3	4x	....
1	23	0	0	....	....	....	3	5	....	3	....	....	....	10	....	....	....	....	1	3	....	....
1	24	0	0	....	....	....	4	....	....	1	8	....	7	20	0x	....	....	4y	1	3	3y	54
2	17	0	0	....	....	....	3	....	....	1	35	....	3	30	0x	1	....	0y	1	3	3x	54
1	29	0	0	....	....	....	3	5	....	1	....	....	....	10x	0x	....	....	....	1	3	7	x
1	17	0	0	0	0	0	3	3	2	1y	16	....	2	20	6x	0y	7	0x	1	3	3x	39
1	24	0	0	....	....	....	3	5	....	1	....	....	....	10	0x	....	....	....	1	3	3	....
1	32	y	....	....	....	0	2	5	....	3	....	....	....	10	....	....	....	....	1	3	....	....
1	24	0	0	....	....	0	3	5	....	1	25	....	....	10	0x	....	....	....	1	3	3x	....
2	30	4	....	....	....	....	3	5	....	1	30	....	....	10x	0x	0	....	....	1	3	6y	40

ECLAMPSIA HISTORIES, CODED

GROUP III—CONTINUED.

Color and Condition	Age	Children	Abortions	Heart	Lungs	Wass.	Blood Pressure	Urine	Pelvis	Attendance	Total Duration	Duration 2nd Stage	Presentation	Operation	Anesthetic	Perineum	Days in Bed	Placenta	Complications	Cond. of Mother	Cond. of Child	Length of Child
2	....	0	0	....	....	....	4	5	....	2	....	....	....	10	0	....	....	....	1	3	....	....
2x	17	0	0	0	0	....	3	5	....	1	....	....	....	10	0x	....	....	....	1	3	3	x
2	32	5	0	0	0	....	4	5	....	1	....	....	....	10x	0x	....	....	0	1	3	....	....
1	29	0	1	....	....	....	2	2	....	6	....	....	....	10	0	....	....	....	1	3	3	51
2x	16	0	0	0	0	....	4	3	2	1	....	....	....	10	0	1	12	0y	1	3	6y	52
2	23	0	0	0	0	0	2	5	1	1	11	70	2	10	0	0	14	y	1	3	6x	32
1	22	0	0	....	....	....	....	....	....	3	....	....	....	20	....	....	....	....	1x	3	3	....
1	33	0	1	3x	0	0	4	3	1	1y	....	....	....	10	0x	0	....	....	1	3	4x	11
1	34	0	1	0	0	0	3x	2	1	1y	24	....	2	60	5	0	67	0	1 3x	3	6y	51
2x	29	3	0	0	0	0	....	....	1	1xy	10	y	2	10	0	1y	9	4y	1	3	3y	51
2x	16	0	0	0	0	0	3	5	3	1	....	....	....	10	0	0	16	....	1	3	....	....
2x	17	0	0	0	0	0	3	5	1	1	11	6	2	10	0	0	15	y	1	3	3	48
2x	19	0	0	0	0	0	3	2	....	1	....	....	....	10	0	0	23	0	1x	3	5	x
2	23	1	0	0	0	0	3	2	1	1x	3	30	2	10	0	0	10	y	1	3	6x	47
2	23	1	0	0	0	0	3	2	1	1x	3	....	....	10	0	0	6	y	1	3	3	....
1	27	0	0	0	0	0	3	3	5	1y	18	10	2	2x	4x	0	....	4y	1	3	3y	45
1x	19	0	0	0	0	0	2x	1	1	1y	6	20	1	30x	8x	1	8	0y	1	3	3y	44
2x	17	0	0	0	0	0	3	5	1	1	24	y	2	20	....	1	8	0x	1	2	7x	49
2	33	0	0	1	0	0	4	5	1	1	44	30	1	10	0	0	14	0x	1	4	6y	48
2x	16	0	0	0	0	0	2	1	4	1x	52	....	2	60	8	0	3	0y	1x	4	6y	47
1	21	0	0	0	0	....	2	....	....	1	....	....	....	....	....	....	2	....	1	4	....	....
2	22	0	0	0	0	0	2	5	2	1y	....	....	1	70	0x	0	21	0x	1x	2	6x	44
1	29	....	....	0	0	0	3	5	1	1	....	....	....	10	0x	0	10	....	1	4	3y	....
2	24	0	0	0	0	0	2	7	4	1	52	y	2	10	4x	2	14	0y	1	3	7y	51
2	18	1	0	0	0	4	4	5	1	1	....	....	2	10	0x	0	11	0y	1x	2	6y	53
2x	17	0	0	0	0	4	3	5	1	1	....	....	2	10	0xy	0	17	0x	1	3	7y	37
2	26	1	0	0	0	0	3	5	1	1	....	....	2	....	....	0x	12	0y	1	3	7y	54
1	30y	1	1	0y	0	....	2	....	1	1	19	10	2	1x	4x	0	11	4y	1	3	7x	42
1x	19	0	0	0	0	0	3	....	1	1	20	31	1	30	8	1	20	0y	1	3	3x	47
1	26	0	1	0	0	0	3	2	2	1y	6	65	1	20	8x	0	9	4y	1	3	7y	43
1	18	0	0	0	0	0	....	5	....	1	....	....	....	30	....	2	....	....	1x	3	6x	y
1x	23	0	0	0	0	0	2	....	5	1y	13x	....	1	20	3	1	13	0y	1	3	3x	52
2x	15	0	0	0	0	0	2	....	....	1x	....	....	....	10	0	0	9	0	1	3	3x	48
1	21	0	0	0	2	....	4	....	....	1	12	5	2	2y	2	0	1	0y	1	4	6y	51
2x	19	0	0	0	0	0	3	5	1	1	5	65	2	10	0	1	9	0	1x	2	3y	....
2x	22	0	0	0	0	0	3	5	....	1	8	x	1	10	0	0	12	....	1x	3	6x	48
2x	18	0	0	0	0	0	3	2	1	1	....	30	2	10	0	0	6	0y	1	3	7x	40
1x	26	0	0	0	0	....	4	5	....	1	11	....	2	10	0x	0	6	4y	1	3	7y	38
1	29	4	0	0	0	0	3	5	....	1	7	7	2	2x	6x	0	8	4x	1	3	3x	49
1	19	0	0	0	0	....	2x	3	....	1	14	....	2	20x	4x	4	3	4y	1	3	6y	44
2x	16	0	0	0	4	0	3	2	....	3	....	....	....	10	0	2	14	....	1	3	3y	....
2x	18	0	0	0	7	0	3	5	....	1	3	25	2	10	0	0	11	0y	1	3	6x	41
2	16	0	0	0	2	0	3	3	....	4	....	....	....	10	0	0	10	....	1	3	3x	....
2x	15	0	0	0	7	0	3	5	....	1	4	50	2	10	0	0	9	0y	1	3	6x	45
1	29y	1	0	....	....	....	3	....	....	1	13	....	x	10x 2	1x	....	....	....	1	3	3y 3y	51 49
1	34	4	0	1	0	....	4	5	....	1	9	....	2	10x	0x	0x	7	4y	1	3	3x	52
1	40y	7	1	0	0	0	2	....	1	1y	....	....	....	2	....	xy	....	....	1	3	7x	y
2	21	0	0	0	0	0	3	3	2	1	13	40	2	10	0	0	14	0y	1	3	6y	46
2	17	1	0	7	7	4	3	3	....	1	....	....	....	....	....	....	7	....	1	3	....	....
1x	19	0	0	0	0	0	3	....	1	1y	6	10	1	2y	2	4	17	0y	1	3	3x	53
1	27	1	1	0	0	....	2	5	....	1	5	15	3	20	4x	0	....	4y	1	3	3x	49

pelvis, "4" rachitic pelvis, and "5" a funnel pelvis. In the next column "1" means delivered in a hospital, "2" unattended, "3" a home delivery, "4" midwife, "5" another doctor, "6" consultation, and "y" prenatal care. The duration of labor is given in hours in the next column and the duration of the second stage in minutes in the following column; "x" means two hours, and "y" means three hours or more. In the presentation column "7"

means breech, "8" transverse and "x" twins. Under operation, "y" means accouchement forcé, "x" bags, "1" Braxton Hicks version, "2" Potter version, "10" a spontaneous delivery, "20" low forceps, "30" midforceps, "40" high forceps, "60" to "67" various types of Cesarean section, "70" craniotomy. Under anesthesia, "3" means chloroform, "4" ether, "2" spinal, "8" sacral, "x" morphine and "y" bromide and chloral. In the complication column "1" means eclampsia, "11" eclampsia and placenta previa, "3" ablatio placenta, and "x" infection. In the column for the condition of the mother "4" means died, and in the next column, "3" means condition of the child good, "4" an abortion, "5" a non-viable premature, "6" a still birth, and "7" a neonatal death. The length of the child is given in centimeters in the next column. "x" in this column means premature and "y" postmature. For further details of the code I refer you to my article, "Vitalizing Obstetric Records."[4]

You will see at once that eclampsia is a disease mainly of youth. One of my patients was thirteen years of age, while seventeen was a favorite age. Many were unmarried. You will also notice that few had prenatal care. Notice also the frequency of accouchement forcé and operative delivery in the group I cases. The code does not show the time of delivery in reference to the convulsions, but in this group it was undertaken while the patient was having convulsions as our concern was primarily to relieve the patient of the cause of her convulsions. Note also that the usual anesthetic is chloroform. In the next fifty-eight cases, or group II, you will notice that anesthesia is used less frequently and when it is employed it is usually ether. The operations in this group are more conservative in character, and while it is not shown by the code, were largely undertaken after the convulsions were controlled. In the last group conservatism is carried to the extreme.

The maternal mortality for the three groups

Table I—Maternal Deaths

	Number	*Per Cent*
Group I (38 cases)	12	31.6
Group II (58 cases)	15	25.9
Group III (108 cases)	6	5.6

is shown in Table I. If time permitted, I would like to go over in detail all the maternal deaths. I will, however, describe the six in group III. The first one was admitted to the Memorial Hospital in convulsions. She had two convulsions after entering the hospital, delivered herself of a still born infant, and died in eleven hours without regaining consciousness. She was treated with morphine, colonic irrigations and venesection. The second case was admitted to St. Philip Hospital in convulsions. She had a spontaneous delivery of a still born baby, and died in twenty-four hours. The treatment in her case consisted of morphine, high colonic irrigations, and digitatone. Chronologically, these belong in this group, but actually they belong in group II. The third patient died of pneumonia in St. Philip Hospital nine days after delivery, which was done after her convulsions were controlled. The fourth case was that of antepartum convulsions in a negro woman with a flat rachitic pelvis. A Cesarean section was done after a trial labor of fifty-two hours. The patient died of peritonitis on the fourth day after the operation. The fifth case was that of an epileptic who developed eclampsia. She was given magnesium sulphate repeatedly with apparently no effect. She died undelivered. The sixth was that of fulminating eclampsia. The patient had convulsion after convulsion in rapid succession in spite of intravenous magnesium sulphate and morphine. I did a version and extraction, as the cervix was fully dilated, under spinal anesthesia. The baby was still born, and the mother died eight hours later in coma. These two are the only cases in which I was unable to stop the convulsions with magnesium sulphate. Sodium amytal promises to be valuable in such cases.

The question, what happens to the mothers who survive, is an interesting one and quite important to the obstetrician. Is there any impairment of their health? Is the risk in subsequent pregnancies enhanced? Bund[5] followed seventy-six eclamptics who survived at the Marburg Clinic and found that 20 per cent of them remained sterile, 20 per cent had eclampsia at subsequent pregnancies, 10 per cent developed chronic nephritis, and 4 per cent developed epilepsy afterwards. The babies that survived the first week had as good a chance as any other babies.

The follow-up in my cases has not been as complete as I would like. In the first place, the names of the colored patients are often incorrectly recorded, and in the second place

many of the unmarried white women come from other states and have been lost sight of completely. Most of the private patients have been easily traced. The records of the Hospital Division of the Medical College of Virginia have been searched for subsequent admissions, and the files of the City Health Department and the State Registrar of Vital Statistics were searched for deaths and births. I take this opportunity of thanking the personnel of these bureaus for their help, without which this part of my paper would be more imperfect still.

Of the cases delivered before 1910 seven have been traced. The first one of my series has had a total of three children and ten abortions. Some of these were spontaneous and some were induced, but all were associated with toxemia. She passed out of the picture at 38 years of age with a blood pressure of 240/140, albuminuria, cylindruria, constant headaches, breathlessness, and an enlarged bleeding uterus. A second patient went through her next pregnancy under the care of Dr. E. T. Rucker without complications, but died of cerebral hemorrhage and hemiplegia at a later pregnancy. A third is in poor health and has had no subsequent children. One is in good health and has had no subsequent children. Two have had still born infants, and one a live born infant 47 cm. long. The labor in this case was induced on account of blurring of vision and albuminuria.

Of the patients delivered between 1910 and 1915, one has had two subsequent children and two abortions. One died of uremia at a subsequent pregnancy, and one died within a year of tuberculosis.

Of the 1915-19 group, one is in good health and has had no children since. One is in good health and has had one child since. One died in 1929 of acute yellow atrophy, and one died in the insane asylum of manic depressive insanity and tuberculosis.

Of the 1920-24 group, one is in good health, no subsequent children. Three are in good health and each has had one child since. One is in good health and has had one live baby and one abortion. One had toxemia at a subsequent delivery and a premature baby that lived two days. One died at her next delivery of toxemia and some sort of operative intervention.

In the 1925-29 group seventeen have been traced. Ten are in good health, no subsequent pregnancies. Two are in good health except for headaches, and each has had one subsequent child. One has had two subsequent children. One had toxemia at a subsequent pregnancy and a premature still born baby. One has died of tuberculosis; one of cardiac hypertrophy and interstitial nephritis; and one has died within a year of eclampsia. This is the only case that I have been able to find in which there has been a second attack of eclampsia.

The six 1930 patients are all apparently in good health.

The question can be approached from a somewhat different angle by studying the cases in which there is a history of eclampsia. I have thirty-four private cases who gave the history of having had convulsions at a previous pregnancy. It is to be presumed that these patients take better care of their health than do the clinic patients. Of these all but four were pregnant. One had a low blood pressure, twenty had normal blood pressures, twelve had moderately high blood pressures and one had a blood pressure of more than 250 mm. of Hg. Five of the thirty-four had albuminuria. Twenty had normal babies, three had still births, five had abortions, and two had babies that died shortly after they were born. In this group of thirty-four women, one mother had ten children after her eclampsia, three had six children, one had five children, one had four, two had three, five had two, and twelve had one child after the eclampsia. Four had no children subsequent to their convulsions.

Conclusions

The immediate mortality in eclampsia varies from 5.6 per cent to 31.6 per cent according to the treatment.

My follow-up has been too imperfect to permit of definite conclusions. One gets the impression that having eclampsia is a definite handicap. A small number of patients died within a few years of cardio-vascular disease. One died of liver degeneration. Three died of tuberculosis.

Subsequent pregnancies enhance the risk although a considerable number go through pregnancy afterwards without complications and have normal babies; perhaps the majority have signs of toxemia with abortions and still births.

REFERENCES

1. Rucker, M Pierce: The Treatment of Eclampsia with Magnesium Sulphate. *Va. Med. Monthly*, 54:558, 1927.
2. DeFuria, Palmer: The Newer Treatment of Eclampsia Essays on Obstetrical Subjects. By Members of the Senior Class in Medicine, University of Pennsylvania. Univ. of Penn., Philadelphia, 1930, p. 149.
3. Eden: Report of the London Committee *Brit. M. J.*, 2:88, 1922.
4. Rucker, M. Pierce: Vitalizing Obstetric Records. *Va. Med. Monthly*, 50:447, 1923.
5. Bund, R.: Ueber das spätere Befünden Eklamptischer und ihrer Kinder. *Zentrbl. f. Gynäk.* 49:2884, 1925.

Medical Arts Building.

MANAGEMENT OF A NORMAL LABOR IN THE HOME.*

By JAMES L. HAMNER, M. D., Mannboro, Va.

We are indeed a long way from our ideal in obstetrics, which should be "A nice, live uninjured baby, and a well, happy mother who is in as good physical condition after, as she was before pregnancy." Too many babies are being lost as the result of improper care and management at birth, and a great many mothers are being made invalids as the result of pregnancy and childbirth.

By careful prenatal care, the patient should be placed in such good physical condition, at the time of labor, that there will be little need of fear if the physician is half-way skilled in this field and is thoroughly clean.

Every patient should have a detailed history taken, a thorough physical examination made, pelvis measured and regular urine examinations and blood pressure readings made until the end of pregnancy. She should be instructed as to diet, elimination, exercise, care of breast and abdomen and cautioned to watch for danger signals and urged to report if any of these appear. With proper cooperation on the part of the patient one of the big problems of obstetrics, namely, eclampsia, should be avoided.

By vaginal examinations during the last two or three weeks of pregnancy we should learn a good deal about the cervix and the kind of labor to expect. If the cervix is long, thick and tough, the patient is going to have a long, tedious, hard first stage of labor. If there are scars, cystic growths or erosions, dilatation will be slower than it would otherwise. If the cervix is small, thin and has gradually dilated, we can be sure the first stage is going to be short and fairly easy. It gives the patient a good deal of satisfaction to be assured that labor is going to be fairly short and easy, and it is certainly a great comfort to the physician to know that his patient is in good physical condition and should have a short and easy labor.

About the eighth month of pregnancy, the patient should be instructed as to the proper preparation for labor. She should be given a list of the necessary equipment for the occasion and instructed in the preparation and sterilization of dry goods, utensils and hot and cold water. She should be instructed to call her physician when she is sure labor has begun, to take an enema, empty her bladder, take a shower or sponge bath (also cautioned against taking a vaginal douche or tub bath), to have the room arranged, the bed prepared, tables, basins, sterile hot and cold water and dry goods in place, and everything gotten in readiness for delivery.

The physician should have with him a case containing all the instruments and apparatus, dressings and medicines necessary for the usual case of labor and for the most common complications. It is a great satisfaction to the physician to know that everything for the proper conduct af labor has been provided and is in readiness.

Every labor call should be answered promptly. There is no time when the physician's presence is more desired and appreciated. It is also important that the patient be seen as early in labor as possible.

On entering the delivery room, the physician notes the general appearance of the patient, the frequency and strength of the pains, takes the pulse, temperature and blood pressure, checks over heart and lungs, and makes notes of findings as well as history of onset and progress of labor. During this time, the nurse is preparing water and utensils for scrubbing hands and puts on gloves and instruments to be boiled. While hands are being scrubbed and finger nails cleaned, the patient is being prepared for an abdominal examination. The position and presentation are diagnosed and fetal heart sounds located, rate and character noted.

With the abdominal examination completed, the physician puts on cap and gown and gets ready for internal examination. In the meantime the nurse gives the patient a thorough

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bath from umbilicus to knees, and mercurochrome is applied to vaginal walls and cervix and a sterile pad is placed over the vulva. It is better that all patients be shaved, but not essential, if proper antiseptic measures are taken. The hands having been thoroughly scrubbed in lysol or bichloride solution and gloves put on, the internal examination is made. Rectal examinations are advocated and should be done, but unless the examiner is very skilled, vaginal examinations are more satisfactory and can be safely done if proper antiseptic measures are taken, undue trauma avoided, and unnecessary examinations are not made. By vaginal examination, you note the size and consistence of the cervix, whether the os is open or the cervical canal shortened or effaced, the presentation and position, advancement of head and any abnormalities. This will give pretty good information as to what kind of first stage labor to expect and proper treatment.

The treatment of the first stage of labor is largely watchful waiting. The patient's resistance to infection should be supported by proper rest, food, relief of pain and prevention of unnecessary examinations and trauma. The bowels should be emptied by saline enema every twelve hours and bladder emptied every four hours, if necessary by catheter. If the cervix is thin and soft and labor is progressing nicely, it is advisable to keep the patient up as long as possible; this favors dilatation and aids progress of labor.

If the cervix is stubborn and the os is rigid, do not try to dilate manually. A manually dilated cervix is always a lacerated cervix and predisposes to hemorrhage and infection. Give morphine and let the patient rest. It will relieve the head of injurious pressure, will rest the uterus and the nervous system, and preserve the heart and life force of the patient. The os will soften; the cervix will dilate, and, when the patient awakes, the pains are resumed with increased force and labor is more often shortened than prolonged. There is no danger from the use of morphine if given at the right time and in proper dosage. Morphine, watchful waiting and strict asepsis in these stubborn cases will do much to prevent the greatest problem in obstetrics, namely, puerperal infection.

Delivery should not be considered and the patient should not bear her pains down until the cervix is fully dilated; it leads to exhaustion and gains nothing. In some cases, however, where the pains are lacking or ineffective, of short, jerky type, and the patient does not cooperate, labor may be prolonged for many hours; even though there is a good sized bag of water protruding through a fairly well dilated cervix, the head does not engage; a small dose of pituitrin (1/8 to 1/4 c.c.) may shorten labor many hours and cause no harmful results. Be slow to use it, however, and be sure there are no contraindications; unless you are, give something for pain and leave alone.

Bearing down pains and rupture of the bag of water do not necessarily mean that the second stage of labor has begun, however, a few sharp pains, attended by a show of bright red blood usually indicates that the head is passing through the cervix. This stage needs active supervision. Everything should be gotten ready for delivery. Some form of anesthesia should be started if not already begun. Chloroform and ether are most generally used. The fetal heart sounds should be listened to every few minutes and labor hastened if danger seems imminent. A full bladder and rectum are two common causes of delay in labor and should be watched for throughout labor. The bag of water should not be ruptured until the head is about ready for delivery. Pituitrin should not be used to terminate the second stage of labor. The danger of injury to the baby and damage to the mother are too great. Every possible measure should be taken to preserve the perineum. Deliver the head in forced flexions and as slowly as possible. Anesthesia produces relaxation and diminishes bearing down efforts. The head should be restrained if patient bears down violently. The shoulders should be delivered by natural forces; the physician aids only by directing mechanism. When the anterior shoulder comes down behind the pubis, the child is lifted and the posterior shoulder brought over the perineum. The child is then depressed and the anterior shoulder comes from behind the pubis; the rest of the body follows easily. To drag the child out of the uterus may tear the perineum or make a slight tear much deeper. No one can prevent all lacerations but they can and should be much less frequent.

Accidents of the third stage of labor cause more deaths than the other two combined. As the child is delivered, the hand follows the

uterus down and rests on it. As long as the uterus is well contracted there will be no severe hemorrhage.

Care of the baby begins when the head is born. The eyes and forehead should be sponged off to remove vaginal secretions, a source of infection. Mucus is removed from the nose and mouth to prevent aspiration of foreign material. As soon as the baby is born it should be wrapped in dry towels and every effort made to maintain its temperature. Do not ligate cord until it ceases to pulsate. To do so will rob the baby of valuable food which will do more to resuscitate it than anything else. Rough, mechanical force is not necessary. When the cord has ceased to pulsate and the baby is breathing as it should, the cord should be ligated and cut, and the baby wrapped in warm blankets and left alone until the mother is cared for. The mother should have been watched for signs of hemorrhage or shock at all times. The perineum is examined for lacerations, which should be repaired at once. The proper repair of birth injuries to the mother and the prevention of hemorrhage, as well as infection, presents another of the big problems of obstetrics. The repair work may be done while waiting for the placenta to be delivered.

Nature intended that the patient deliver the placenta herself. Usually between ten and forty-five minutes after delivery the cord becomes limp, advances three to four inches and the uterus rises up into the abdomen indicating that the placenta has separated and has been expelled into the vagina. There is no need of waiting longer. It can be easily removed and should be as there will be less likelihood of clots forming. A hypodermic injection of pituitrin at this time, followed by ergot by mouth, will prevent hemorrhage and help to prevent after-pains, as fewer clots are formed. The placenta and membranes should be examined carefully to see if any small portions are left. If so, note should be made of it, but it is safer to let nature take care of it than it is to invade the uterus, unless you are absolutely sure there is enough left to cause trouble.

The patient should be bathed with a lysol or bichloride solution, band and dressing applied, and returned to her bed as soon as possible. With the mother cared for, the baby is carefully examined for any abnormality. Many babies die during the first few weeks of life because some abnormality, which should have been corrected, was overlooked. It is then sponged off with warm olive oil, drops put in eyes, umbilical dressing applied and dressed.

Complete written instructions should be given for the care of the child and mother during the puerperium. The patient should be seen on the third and fifth days, preferably daily, and instructed to call physician should anything unusual happen. Careful attention to the baby should be urged.

The final examination, around the sixth week, should be thorough, and proper attention should be given to any unhealed or infected areas as well as final instructions for further care of mother and baby.

Summary

While we do not undervalue the numerous advantages which the hospital offers in the management of a normal labor, we are convinced that the majority of cases can be handled safely and satisfactorily in the homes if we keep constantly in mind the following important factors:

1. Careful prenatal care.
2. Strict asepsis and watchful waiting during the first stage of labor.
3. Proper administration of anesthesia, strict asepsis, slow delivery and prevention of trauma and exhaustion during the second stage.
4. Strict asepsis, slow placental delivery, careful attention to baby, and prevention of hemorrhage, shock and infection in the mother during the third stage of labor.
5. Careful puerperal care and attention to the baby.
6. Thorough final examination and proper attention to abnormalities.

ENCEPHALOGRAPHY AS AN AID IN THE DIAGNOSIS OF BRAIN TUMORS—A CASE REPORT.*

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Every neurologist has in his practice cases which show a few scattered neurological symptoms not characteristic of any particular type of lesion or disease. The diagnosis in such cases is frequently withheld and the patient observed until other diagnostic symptoms appear. The value of air in ventriculography (inject-

*Read before the Richmond Academy of Medicine, January 13, 1931.

ing air into the ventricles) has been well established by Dandy and other neuro-surgeons. In the past several years Temple and his associates have injected air by the spinal route, replacing the cerebrospinal fluid. This is known as encephalography. Roentgenographic studies of these cases have in many instances revealed cerebral defects and have been of value in localizing otherwise obscure lesions. The method of encephalography has become of practical value and can be used with safety when choked discs and increased intracranial pressure are not present. Air injection is of considerable diagnostic value to the physician, especially in revealing cerebral atrophy and other degenerative conditions due to inflammatory processes, hemorrhages, birth trauma and the like. In the past these cases have frequently been given indefinite opinions and have gone to physician after physician hoping to find some relief from the symptoms. Now a reasonably definite diagnosis can be given them.

The case herewith reported is one of a group of cases which have been studied by encephalography. This case presented a rather confusing clinical picture, the discussion of which is embodied in the case report.

A young married man, twenty-six years of age, an insurance agent by occupation, presented himself for examination early in September, complaining of nervous attacks. He gave a family history that his father had died of cancer of the prostate, his mother of an accidental fall, and two brothers and two sisters died early in infancy, the cause of which he did not know. His other brothers and sisters, his wife, and one child were all well. The patient was of normal birth and had the usual childhood diseases. He had influenza rather severely in 1918, some generalized pain in the past five years which had been regarded as arthritic, with some residual symptoms in the right hand at the time of examination. His arthritic condition was said to have begun after a muscle strain of the left arm. He had sinus trouble the latter part of July, and in August his tonsils were removed. All of his life he has been of a nervous temperament.

The nervous attacks of which he complained began just after Christmas, 1929, with a slight drawing of the fingers in the right hand together with slight nervousness, restlessness, anxiety, and some momentary numbness involving the right arm and face. These attacks occurred on an average of once a month until the fourteenth of September, 1930, when he developed a spasm of the fingers of the right hand and of the arm. This was accompanied by unconsciousness and frothing for fifteen minutes and was followed by sweating and slight headache. The second attack, occurring on September the twentieth, was similar to the first one, but was preceded by slight disturbance of vision, and during the attack he bit his tongue and vomited. His speech was also somewhat thickened after the attack. The patient denied an initial lesion or any venereal infection. His general physical examination revealed the following:

The patient was rather a well nourished individual with a florid complexion and had a slight stare of his eyes. His blood pressure was 136/88; pulse 80; there was no evidence of focal infection. He showed no especial endocrine disturbance from a clinical standpoint. His station and gait were normal and his cranial nerves were negative though there was a slight facial asymmetry on the left. His fundi were perfectly normal except for a slight vascular abnormality. On the right side he showed some upper ataxia, a moderate asterognosis, and an attempt at ankle and patella clonus. The right elbow and Achilles jerks were increased; the left jerks were diminished. The knee jerks were markedly exaggerated but equal. His abdominal reflexes were absent and there was a fine tremor of his right hand. Sensation was normal except as above noted. His thenar and hypothenar eminences showed very definite atrophy, bilaterally, and there was a contracture of both little fingers which had existed since birth.

The routine blood and spinal fluid Wassermanns and colloidal gold curve were negative. His spinal fluid showed a pressure of 14 millimeters of mercury, four cells and a slight increase in globulin. The blood cytology and stools were normal. His urinalysis showed an occasional pus cell and three red blood cells per high power field. His non-protein nitrogen was 35.3 milligrams per 100 c.c. of blood. Stereoscopic plates of his head revealed a thick skull wall, large accessory nasal sinuses, a number of areas of porosity of the skull involving the frontal and parietal regions on both sides varying from five to nine millimeters in diameter. The pituitary fossa was

large, having a measurement in its horizontal diameter of 15 millimeters, vertical 11 millimeters, outlet 6 millimeters. The posterior clinoids were somewhat roughened and the head as a whole was of the acromegalic type.

During the course of his illness the patient had, on an average of once a month, Jacksonian attacks, involving his hand; only once did he have symptoms of headache or vomiting, and this was in the last attack three days before his admission to the hospital. Such attacks may be due to a new growth, or to inflammatory involvement and its sequelae. Although he gave no history of an initial lesion he had four brothers and sisters to die early in infancy which suggested the possibility of a hereditary specific condition. Though the absent abdominals suggested the possibility of increased intracranial pressure, his fundi were perfectly normal. A lumbar puncture was done and ruled out evidence of much increase in pressure, and syphilis, which the porosity of the interior of the skull indicated. The history of severe influenza in 1918, rheumatic infection for the past five years, and sinus trouble and infected tonsils four weeks before his first severe attack suggested an inflammatory process. An encephalogram was made and the report was as follows: "There is evidence of the presence of air in the basal systems and cortical pathways. The lateral ventricles do not contain any appreciable air. The left posterior parietal region has a large collection of air at the cortex which casts a somewhat irregular shadow although some of the shadows here seem to denote dilated cortical pathways." The encephalogram ruled out brain atrophy which might have been caused by an old inflammatory condition, and the irregularity of the shadows noted in the left parietal region so well corresponded to the area of cortical irritation as represented by the physical symptoms that a diagnosis of left cortical tumor was made. The patient was transferred to the Memorial Hospital where he was operated on by Drs. Coleman and Lyerly. Upon turning back the parietal bone flap they discovered an exostosis of bone which was irregularly shaped and in general ¾ inches in diameter, about ⅛ of an inch thick on the margins and came to a sharp point about ¼ of an inch thick in the center. The area underneath this plaque of bone was one of the porosities described in the first X-ray. Directly underneath this and almost completely invaginated in the brain over the motor area, and pressing against the sensory area, was an encapsulated tumor, 2¼ inches in diameter and 1½ inches thick. The dura was adherent to the exposed surface of the growth. The tumor was enucleated without great difficulty other than some hemorrhage. There was considerable edema and following the operation the patient had a paralysis of the left face and the right arm, and for four or five days was slightly confused. He also had a few tonic spasms of the lower extremities. The paralysis of his arm and face gradually cleared. He was discharged thirty-five days after the operation with only a slight residual paralysis.

On the eighth of January he returned and stated that he had had only one convulsion, which occurred on December the twenty-eighth, in which he was unconscious for five minutes. This involved only his right hand but was accompanied by biting of his tongue. His physical examination at the time of his re-examination showed a slight upper ataxia in the finger to finger test; grip was fifty in the right hand and seventy in the left; the atrophy of the intrinsic muscles of his hand was slightly improved; his right biceps jerk was hyperactive and there was a right Hoffman. His superficial reflexes remained absent.

It is believed that the patient still has some cerebral edema and some post-operative adhesions of his motor area. The tumor was diagnosed on gross section as dural endothelioma. Microscopically it showed many whorls.

SPRUE IN SOUTHWEST VIRGINIA: A CASE REPORT.*

By R. D. CAMPBELL, M. D., Saltville, Va.

This subject has not been chosen because of it being a practical one in this country, nor because I have observed or discovered anything new about sprue, but rather because it is so rarely encountered in temperate zones. While fairly common in tropical and subtropical countries, seldom is this disease considered a possible diagnosis in obscure conditions presenting suggestive symptoms but existing in cooler climates.

After all, it is the unusual disease or some unusual complication of an ordinary disease that makes the field of medicine so eternally

*Read before the Southwestern Virginia Medical Society, in Wytheville, Va., March 19, 1931.

interesting. Hence, at the risk of being impractical and, possibly, of incurring some doubt on your part as to diagnostic accuracy, I present these observations along with a brief report of the case which prompted them.

Sprue is a chronic, cachectic disease of the gastrointestinal tract, characterized by acute manifestations as the various parts of the tract become successively involved. The principal symptoms are (1) sore mouth and tongue, (2) burning, distention and general discomfort in the abdomen, (3) a light colored, frothy diarrhea, (4) progressive emaciation, and (5) anemia.

To Ashford belongs the credit for the most recent and exhaustive work on sprue. His observations were made in Porto Rico where the disease is endemic and highly prevalent. He found it occurring most frequently among the upper classes of people, who ate well and consumed quantities of fats and starches, and much less prevalent among the poorer classes where sanitary and dietary conditions were bad. In this respect the disease differs radically from most of the purely deficiency diseases.

Ashford indicts, as the direct cause of sprue, the Monilia psilosis, an yeast fungus which he isolated from the gastrointestinal tract of active cases. To give us an idea of the resistance of the organism, it might here be stated that he also recovered it as a culture from the inside of a loaf of baked bread. This yeast was present in over 87 per cent of Ashford's cases, thirty-six of which occurred in families in which there originally existed a single infected individual. This led him to classify sprue as a communicable disease with the Monilia as the exciting cause. He believed, however, along with others, that a hot climate and an improperly balanced diet produced an environment suitable for the growth of the responsible organism.

Cases of non-tropical sprue have been reported as originating in England, Germany and the United States. However, in cooler climates it runs a rather atypical course, showing well marked exacerbations and remissions as the seasons change.

Porter and Rucker have reported two cases of non-tropical sprue in Virginia, with all the clinical characteristics, but they were unable to demonstrate the Monilia psilosis either in the stools or mucous membrane of the mouth.

Case Report

C. W. S., white, Methodist minister, aged 65 years, came to our attention in July, 1929, complaining of sore mouth and tongue, recurring attacks of diarrhea, profound general weakness and loss of weight.

The gastrointestinal symptoms began about ten years ago. Since their onset they had persisted with occasional remissions but at no time had there been entire freedom from discomfort in the alimentary tract. The diarrhea consisted of large light foamy stools, numbering two to six a day, two or three at night, and usually gave rise to some burning and pain about the rectum. This occurred intermittently with constipation, at which time the patient was disturbed by fullness and discomfort in the abdomen. At this examination he was mentally clear and apparently free from nervous symptoms of any sort but was exceedingly discouraged because of increasing ill health. He stated that he was strongly considering giving up his pastorate entirely.

Physical examination showed marked emaciation and undernourishment in a rather large framed male whose normal weight was about 170 pounds. He now weighed 121 pounds. Six months previously his weight had been 155 pounds. There was no cyanosis, jaundice nor lemon-tinged skin and no edema. The tongue was red and fissured, with several small ulcers about its margins and tip. No chest pathology was found. The abdomen was moderately distended and slightly tender in the epigastrium. Proctoscopic examinations were not made.

Gastric analysis, after an Ewald test meal, showed a free hydrochloric acid content of 13 degrees and a total acidity of 22 degrees. The blood picture showed a red cell count of 2,800,000, hemoglobin 60 per cent (Talquist), and 7,000 leucocytes. The differential count gave 65 per cent polymorphonuclears and 35 per cent lymphocytes, small and large not differentiated. No nucleated red cells were found. Anisocytosis and poikilocytosis were not marked.

The stool specimens were bulky, light colored and frothy and were negative for blood, ova of intestinal parasites and amoeba. These specimens were examined in the State Laboratory and an organism identified as the Monilia psilosis found.

The patient was immediately put on liver extract and dilute hydrochloric acid with

practically no dietary restrictions except to advise an increase of proteins and fresh fruit. Improvement, manifested by almost immediate and complete relief from disagreeable symptoms, return of appetite and a most satisfactory gain in weight, rapidly followed. In three weeks, the red blood count was 3,900,000 and hemoglobin 75 per cent. Two months later, the red cells numbered 4,600,000, with 80 per cent hemoglobin.

The liver extract equal to 480 grams of raw liver was given daily for four months after which a maintenance daily dose of 120 grams was administered for the following three months. There has been no recurrence of the disease despite the fact that except for small doses of dilute hydrochloric acid medication was discontinued a year ago. The patient now weighs 163 pounds and, except for an intervening attack of pyelitis, his health has been excellent.

The history, symptoms and laboratory findings, despite non-residence in the tropics, seemed satisfactorily to confirm a diagnosis of sprue as against that of pernicious anemia, the differential points being based on the character of the stools, the presence of appreciable amounts of free hydrochloric acid in the stomach, isolation of the Monilia psilosis, absence of neurologic symptoms, a blood picture at least atypical of pernicious anemia, and what to me seems rather important, the history of a disease which had existed several years without treatment.

Summary of Case Report and Conclusions

A patient who had never resided in or near the tropics developed or contracted sprue.

The disease may exist over a period of many years.

The response to liver extract and hydrochloric acid was most gratifying.

Sprue should at least be thought of as a possibility in all cases diagnosed as pernicious anemia.

EUGENIC STERILIZATION.*

By JOHN R. GILL, A. B., M. D., Petersburg, Va.
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Eugenics means the study and cultivation of conditions that may improve the physical, moral, and mental qualities of the future generations. Eugenics comes from the Greek word eugenos, which means well born. Eugenics, as applied to the human race, attempts through the limitations of defective lines and education to modify unfavorable factors for the progressive improvement of the race. It has long been recognized that selective breeding of animals would result in the progressive improvement of the animal. This knowledge has been applied to animals and plants for their upbuilding and improvement.

The human race has developed through countless ages under the laws of heredity by the survival of the fittest. The weak and defective have perished. But, in the present age, modern civilization and charity have interfered and changed nature's plans. The weak and defective are now nursed to maturity and produce their kind. Nature intended that only the best should breed by weeding out the unfit. But in the present age the best strains of blood are limiting their children to an average of one and two. As a result we are breeding much more rapidly from the bottom strata of the race than from the top.

Attempts to promote eugenics by radical measures are found as far back as history records. Legend relates that the mythical Queen Semiramis, of Nineveh, had weak and sickly males of her kingdom castrated in order that the racial stock might not deteriorate. A traveler in Palestine in the 13th century reported that thieves were castrated there in order that they might not produce sons who would be criminals like their fathers.

The ancient Greeks and Romans realized the principles of eugenics and destroyed the defective children by drowning or making the children undergo severe physical hardships. This resulted in the death of the weak and defective, and the survival of the strongest and fittest. This practice, however, was discontinued with the spread of Christianity through Europe.

The next eugenic measure to be practiced was that of segregation of the insane and mental defective. This prevented the reproduction of those who were unsound mentally as well as protecting society against them.

In 1779, Johann Peter Frank, a German physician, urged that the mentally diseased and the mental defectives be castrated to prevent the deterioration of the race. He was one of the precursors of the modern eugenic movement. In 1899, Dr. Harry Sharpe began sterilization of the boys at the Indiana State

*Read before the Southside Virginia Medical Association, at Petersburg, March 10, 1931.

Reformatory. He performed a vasectomy instead of a castration. While this was done without legal authority, it marked the beginning of eugenic sterilization in the United States. In 1909, the States of Washington and California adopted sterilization laws. Since that time numerous other states have passed sterilization laws, but it was left to the State of Virginia to pass the first eugenic sterilization law that was approved as constitutional by the United States Supreme Court in 1927.

To show why eugenic sterilization is of so vast importance, I will mention a few things concerning the problem of mental diseases in the United States. The number of known mentally diseased persons is now three times as great in proportion to the total population as it was in 1880. Part of the increase is due to the immigration of people from foreign countries who are mentally weak and who are not capable of adjusting themselves to life in America. Some of the increase may be due to the fact that people are now living longer than formerly and mental diseases that appear after middle life are more frequent. Another factor is that modern civilization, particularly in the cities, has become so complicated that it produces mental breakdowns in many people who attempt to struggle in the cities for a livelihood. In addition to these factors there has been a tremendous increase in the number of mental defectives in this country by reproduction. Statisticians have estimated that at the present rate of increase in insanity, something like four people in each one hundred of population of the United States will be classified as insane before they die. In addition to the insane, it is estimated that 4 per cent of the total population of the United States are mental defectives. Thus you see why the mental problem in the United States is of such vast importance and why eugenic sterilization is going to be one of the chief measures in the fight against the great increase in mental diseases and mental defectives.

Sterilization produces no change in the sexual life. No organs or glands are removed from the body. It produces no physical change and sexual feelings are not altered. Something like 6,000 sterilization operations have been performed in California and the opinion of the California authorities is that sexual life is unchanged in a sterilized person. Sexual life has been increased in some of the patients that were operated upon. This may be due to the fact that these people knew that they should not have children who would possibly be mentally diseased, and as a result prior to the operation their whole life was abnormal. Thus eugenic sterilization, so far as can be judged, has no other effect on the individual than to prevent parenthood.

There are numerous methods of sterilization at the present time. In the male a simple vasectomy is usually performed. The vas deferens is located, stripped of the accompanying blood vessels and nerves and clamped in two places. Then about half an inch of the vas deferens is removed and the cut ends are ligated. A local anesthetic of novocaine is usually used. This is a very simple operation and necessitates the patient being in bed only a short time.

There are several methods of sterilization in the female. One of the methods consists in excision of a wedge shaped portion of the fallopian tube at the cornea of the uterus with careful burying of the tubal stump in the broad ligament. Then suturing and peritonization of the uterine wound is done. Another method is the removal of a section of the fallopian tube and burying the ends of the tube in the broad ligament. Another method is removal of the fallopian tube. At the Central State Hospital we use the Madlener operation. In this operation the fallopian tube is angulated, crushed, and ligated at the cornea of the uterus. This is a very simple operation and can be quickly performed. In addition, it has the advantage of being practically bloodless. In Europe where this operation was originated, there have been no reported failures by this method. We have had no known failures at this hospital with the Madlener method of sterilization. The classical method of sterilization, consisting of removing a wedge shaped portion of the fallopian tube at the cornea of the uterus, is reported to be unsuccessful in from 6 per cent to 10 per cent of the operations. There are numerous other methods of sterilization in the female which are not used very much, such as electric cautery applied to the uterine end of the fallopian tubes and also removal of the fundus of the uterus by operation.

At Central State Hospital we have sterilized 166 women and seventy-nine men. This makes a total of 245. There have been approximately

800 sterilizations performed in the State of Virginia since 1927.

At this hospital we have just begun the checking of the sterilization cases by X-ray, using lipiodol. The lipiodol is forced into the uterus by means of a special instrument at a pressure of 150 millimeters of mercury. If a woman is effectively sterilized, the lipiodol will remain in the uterus and not spread to the fallopian tubes or through the uterus to the abdominal cavity, depending upon what type of operation was used. By this method we have an absolute check as to whether the patient is sterilized and cannot reproduce.

Eugenic sterilization is not a panacea but it is one of the eugenic measures which will help to reduce the racial and financial burdens of this and future generations. It should go far in eliminating the insane and mental defectives of the future, and should result in the progressive improvement of the race.

SPOROTRICHOSIS—REPORT OF A CASE IN VIRGINIA.

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Although several hundred cases of sporotrichosis have been reported since the fungus was isolated, in 1898, by B. R. Schenck, this infection has been but rarely recognized in Virginia.

Schenck[1] described the first case as an unusual infection following a scratch of the index finger by a nail. From this point the infection extended along the lymphatics up the arm, giving rise to multiple, subcutaneous, refractory abscesses. From two of these abscesses he isolated, in pure culture, a fungus which was classified by Dr. Erwin F. Smith as possibly related to the sporotricha. From these cultures Schenck made careful descriptions of the growth, the morphology of the fungus and the results of animal experiments.

In 1900, Hektoen and Perkins[2] observed a similar case with an almost identical course. The infection followed an abrasion of the finger from a blow by a hammer. From the subcutaneous abscesses which followed on the forearm, an organism was isolated which was identical in all essential details with the one reported by Schenck. The name Sporotrichum schenckii was suggested by Hektoen.

In 1909, Trimble and Shaw[3] reported a case in which the lesions were distributed over the insertion of the deltoid muscle of the left arm, and along the lymphatics on either side of this muscle.

From this time it is quite apparent, from the number of cases reported, that sporotrichosis is to be regarded as a clinical entity.

As encountered in America, the infection follows some abrasion of the skin or mucous surface. This is invariably followed by superficial ulceration with deep cutaneous nodular inflammation along the lymphatic channels, terminating in ulceration. All of the ulcers are superficial with a thin, pale, slightly undermined, pigmented border. The nodules are deep within the subcutaneous tissues. They are movable, painless, hard and with a dense connective tissue reaction about a purulent center. The face and the extremities are the favorite sites of attack, but a number of tissues and structures have been involved. Of the latter, the following may be mentioned: bone,[4] joints,[5] pharynx,[6] muscle,[7] eye-lids,[8] mouth, larynx, trachea,[9] eye,[11] lung,[10] breast,[12] genitalia,[13] lung metastases,[14] large intestine and finger nails.[15]

Although in most of the reported cases the lesion followed some mechanical injury, Davis and Moore[16] reported a case in which infection followed a mouse bite. Sutton[17] had a case in which the wound was due to the peck of a chicken. Olson[18] reported a case which was probably contracted from gophers. Lane[19] reported five cases due to contact with domestic animals.

De Beurmann and Gougerot[20] have attempted to classify this disease into three general types: syphilitic, tuberculoid and wart-like or papillomatous forms. The syphilitic variety is considered by far the most frequent and is characterized by multiple, scattered subcutaneous abscesses resembling a gumma-like lymphangitis. When these abscesses spontaneously ulcerate they resemble ecthymatiform tertiary syphilides. The tuberculoid form resembles subcutaneous, tuberculous gummata and is characterized by slow development, slow healing and a remaining irregular, stellate scar. The warty variety is characterized by lesions resembling papillomatous, dermatic warts, which are, sometimes, so characteristic of ulcerative lymphangitis.

The causative organism, Sporotrichum

schenckii, may be demonstrated in the pus of the abscesses by Gram's method of staining or by the use of 20 per cent sodium hydroxide solution. It is Gram positive, single-celled and

Fig. 1.—Sporotrichosis of arm, showing characteristic lesions.

spindle-shaped, and is most frequently demonstrated within the polynuclear leucocytes. In some cases it is necessary to resort to cultural methods in order to demonstrate the organism.

Pure cultures may be obtained if made from the abscesses which have not spontaneously ruptured. The fungus grows well on ordinary nutrient agar, but the growth is somewhat more profuse if a small amount of dextrose is

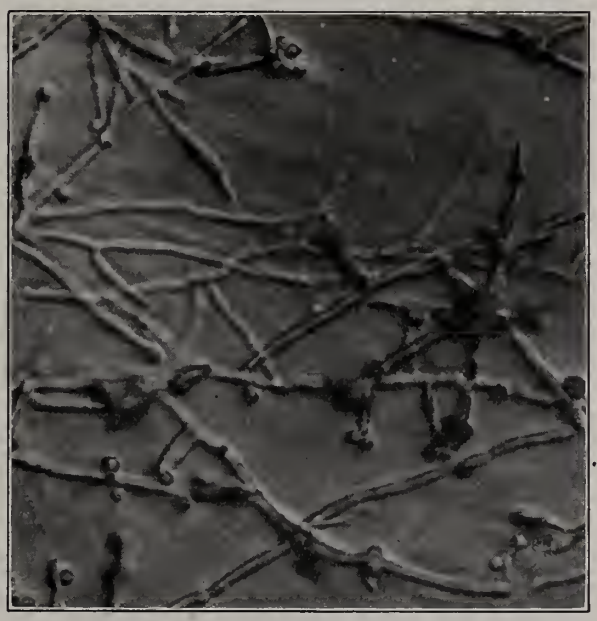

Fig. 2.—Sporotrichum schenckii. Growth on nutrient agar. X500.

added to the medium. Growth is perceptible in twenty-four to forty-eight hours as a faint, slightly opaque, whitish growth, resembling a bacterial growth rather than a fungus one. As the culture ages, the surface may become wrinkled and the color turn from cream or light tan to a brown or black. Aerial mycelium rarely develops and the surface of the growth generally remains slimy.

Microscopical examination of the growth from agar shows the organism to consist of a branching mycelium from which ovoid conidia develop either from the sides of the mycelium or from the lateral or terminal filaments. The mycelium and conidia stain well with the aniline dyes and by Gram's method. Most detail is shown by Wright's stain. The relationship of the mycelium and the conidia may be very well demonstrated by making a gelatin stab culture and at the end of approximately a week (when the lateral growth is evident) the gelatin is hardened with formalin and sectioned after the method used by one of us.[21]

The pathology of the lesions of sporotrichosis is principally that of a chronic irritation of the subcutaneous tissue and lymphatics. The epithelium overlying the small nodular abscesses is unchanged. The tissues most remote from the abscess wall under the influence of the irritant are stimulated to a marked over-production, chiefly of the connective tissues. The elastic tissues are greatly increased. Adjacent to the purulent center the connective tissues are necrotic, infiltrated with masses of plasma cells and leucocytes. Giant cells are a constant feature, though not numerous. Mycelial filaments are rarely seen, but the

Fig. 3.—Sporotrichum schenckii. From agar growth. Stained slide preparation. X950.

spindle-shaped organisms are abundant, either free or within the leucocytes.

The treatment of sporotrichosis consists of

the administration of iodine, internally and externally. The use of potassium or sodium iodide internally, and tincture of iodine externally is specific. In some cases the treatment is less responsive than in others. Burgess[22] reported a case in which six months treatment with large doses of potassium iodide was necessary before complete recovery resulted.

Report of Case

The patient was first seen at St. Vincent's Clinic, Norfolk, Va., October 29, 1930. Colored female, age 22 years, married, housewife.

Family History: Father died from cerebral hemorrhage. Mother alive and well. Three brothers and two sisters alive and well. No history of chronic or malignant diseases.

Marital History: Married about four years. One child born one year after marriage. This child died as the result of an accident at the age of seven months. Husband living and in good health.

Personal History: Has always enjoyed good health.

Present Illness: The onset was thought to be a mosquito bite on the left wrist, about two months ago. A small nodule followed, which later ulcerated. In one or two weeks, the patient noticed some nodules on the forearm, and these, in turn, were followed by nodules on the upper arm. These likewise softened and gradually formed discharging ulcers. There was no marked pain or systemic symptoms. The patient had applied powdered sulphur and various antiseptics to the lesions.

Physical Examination: The left arm was involved with ulcerations and nodules as is shown in the photograph; otherwise the examination was essentially negative. The blood Wassermann was 4 plus. S. schenckii was isolated from one of the abscesses.

The patient was given ten grains of potassium iodide three times daily; this was increased to twenty grains three times daily. By December 15, 1930, the patient was well. Scars were present at the sites of the ulcers.

References

1. Schenck, B. R.: *Bull. Hopkins Hosp.*, p. 286, 1898.
2. Hektoen and Perkins: *J. Exp. Med.*, p. 77, 1900.
3. Trimble and Shaw: *J. Kans. Med. Soc.*, p. 846, 1909.
4. De Beurmann, Gougerot and Veine: *Bull. mem. Soc. Med. d. hop. d. Paris*, 26, 1123, 1909.
5. Bonnett: *Bull. Soc. franc de Dermat. et Syph.*, Paris, 21, 347, 1910.
6. Brissaud, Gouferat and Gy: *Bull. et mem. Soc. Med. d. hop. de Paris*, 25, 613, 1908.
7. Brissaud and Rathery: *Comp. rend.*, Paris, p. 315, 1908.
8. Danless and Blanc: *Bull. et mem. Soc. Med. d. hop. de Paris*, 24, 1450, 1907.
9. Letille and Debre: *Bull. et mem. Soc. Med. d. hop. de Paris*, 25, 379, 1918.
10. Laurent: *Presse Medicale*, Paris, 21, No. 80.
11. De Lapersonne: *Presse Medicale*, Paris, 20, 93.
12. Quenu: *Revue de. Chir.*, Paris 34, No. 5.
13. Brainos: *Paris Med.*, 36, 247, 1920.
14. Warfield: *Amer. J. Med. Sc.*, 164, No. 1.
15. Boggs and Fried: *Bull. Hopkins Hosp.*, 37, p. 164.
16. Davis and Moore: *J. Inf. Dis.*, 23, 253, 1918.
17. Sutton: Diseases of the Skin. 3 ed., 1020, 1919.
18. Olson: *J. A. M. A.*, 59, 941.
19. Lane: *Okla. State Med.*, 13, No. 2.
20. De Beurmann et Gougerot: *Les Nouvelle Mycoses*, Paris.
21. Shaw: *Zentralblatt f. Bakter.*, etc., 119, 460, 1931.
22. Burgess: *Arch. Derm. and Syph.*, 12, 642.

REPORT OF EIGHT CONSECUTIVE CASES OF RUPTURED GASTRO-DUODENAL ULCERS.*

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Recently several articles have appeared, reporting the results obtained in ruptured gastro-duodenal ulcers. Bager, of Stockholm, has collected a total of seventeen hundred and sixty-seven cases from fifty Swedish hospitals over a period of fourteen years (1911-1925), which had been operated upon by one hundred different surgeons. About 60 per cent of these ulcers were in the duodenum and 25 per cent of the patients were women. There was a mortality of 33 per cent. Williams and Walsh, of Liverpool, have collected one hundred and fifty-eight cases, six of which were women. About 75 per cent of these ulcers were duodenal, and there was a mortality of 29 per cent. Farr, of New York, reported one hundred and thirty-nine cases, only six being in women. Eighty of these ulcers were duodenal and a mortality of 20 per cent was reported.

All of these writers believe that the best results were obtained by a simple closure of the perforation, but the question of draining the peritoneal cavity was debated.

Within the past two years there have been eight cases of ruptured gastro-duodenal ulcer admitted to St. Elizabeth's Hospital, with only one death, a mortality of 12½ per cent. All of the patients were men, with their ages vary-

*Read before a meeting of the Mid-Tidewater Medical Society, Saluda, Va., April 28, 1931.

ing from thirty to sixty-two years, and the duration of the rupture, as judged from the history, from two to eighteen hours. There was but one gastric ulcer in the series. Four of these patients were operated upon by Dr. J. Shelton Horsley, three by Dr. John S. Horsley, Jr., and one by Dr. A. I. Dodson, practically the same operative technic and post-operative treatment being used in all cases.

Case No. 1.—Mr. N. T. H., age 30 years. Patient was admitted to the hospital complaining of severe pain over the entire abdomen for the past two hours, accompanied by nausea and vomiting. He gave a history of peptic ulcer symptoms over a period of a year, and had gone untreated. On physical examination, the abdomen was found to be extremely rigid with tenderness throughout. The patient was operated upon, under ethylene-ether anesthesia, by Dr. A. I. Dodson. There was found in the peritoneal cavity a small amount of murky fluid which was removed with the suction apparatus. A round perforation, ½ cm. in diameter, was found in the duodenum. The ulcer crater was cauterized with the electric cautery, and then the defect was closed with three layers of 00 tanned catgut. The last row was of interrupted sutures and the long ends of these were passed through some loose peritoneal covered fat. in this way sealing the suture line. The peritoneal cavity was drained with cigarette and rubber drains through two stab wounds.

The patient made an uneventful recovery, there being only a slight infection of the abdominal wound which was completely healed before the patient was discharged from the hospital. Patient's temperature and pulse became normal on the tenth post-operative day and remained so. He was discharged from the hospital twenty-three days after operation and has had no further trouble.

Case No. 2.—Mr. G. T. J., age 60 years. Patient was admitted complaining of sudden, severe abdominal pains over his entire abdomen, which had been present for seven hours previous to admission. He gave a history of digestive disturbances for the past ten months with one attack of hematemesis nine months before. The present pain originated in his epigastrium. On examination it was evident that the patient was critically ill. His abdomen was slightly distended; there was board-like rigidity of all of the abdominal muscles; moist rales were heard in both lungs, and his heart was definitely enlarged. The blood pressure was 160/100. His fingers, toes and lips appeared cyanotic. W. B. C. 6,800, with 85 per cent polys. Blood urea 65 mg. per 100 c.c.

The patient was operated upon, under local and ethylene anesthesia, by Dr. John S. Horsley, Jr. Dudoneal and gastric contents were found throughout the entire peritoneal cavity, and a perforation of 1 cm. in diameter was found in the first portion of the duodenum on its upper posterior wall. The ulcer crater was cauterized with the electric cautery, after the free fluid had been withdrawn from the peritoneal cavity. The perforation was then closed as in the previous case and the peritoneal cavity drained through two stab wounds.

The patient seemed to be doing fairly satisfactorily for the first forty-eight hours, and then began to show definite signs of circulatory failure with increasing toxicity. The blood urea remained high, the white blood cells low, and the patient became irrational. On the fifth post-operative day his temperature and pulse began to rise steadily and he died on the following day. Necropsy showed a mild generalized peritonitis but no abscesses or undrained areas. A definite broncho pneumonia was found.

Case No. 3.—Mr. G. C. B., age 38 years. Patient gave a history of intermittent attacks of indigestion and cramp-like pains in the right side of his abdomen over a period of a year. These pains were not associated with meals. Eight hours previous to admission he had a sudden attack of right sided abdominal pain. There was no nausea nor vomiting. Examination showed generalized abdominal rigidity and tenderness which was more pronounced on the right side. W. B. C. 14,000, 93 per cent polys. Blood urea 52 mg. per 100 c.c. A diagnosis of either a ruptured appendix or peptic ulcer was made.

The patient was operated upon by Dr. John S. Horsley, Jr., under ethylene-ether anesthesia. A McBurney incision was made, the appendix was found to be slightly inflamed and was removed. However, a large quantity of pus was present in the pelvis so a right rectus incision was made. The pyloric end of the stomach was adherent to the under sur-

face of the right lobe of the liver and a perforation was found about ½ cm. in diameter on the anterior wall of the pylorus, 4 cm. from the pyloric sphincter. The free fluid in the peritoneal cavity was removed with the suction apparatus, the cavity flushed with normal saline solution, and this also withdrawn. The ulcer crater was first destroyed with the electric cautery and then the perforation closed as in the previous cases. The peritoneum was drained with cigarette and rubber tube drains through a stab wound and the McBurney incision.

He made an uneventful recovery and was discharged on the thirtieth post-operative day. The patient's temperature never exceeded 99.6 and his pulse remained below 92. There has been no further trouble and he has gained about twenty pounds.

Case No. 4.—Mr. F. D. L., age 40 years. Patient was admitted complaining of acute epigastric pain which began eighteen hours previously, without nausea or vomiting. He gave a history of previous peptic ulcer symptoms for the past two years. On examination the patient's abdomen was very rigid, with muscle spasm and tenderness more marked in the upper abdomen. Physical examination was otherwise negative. W. B C. 16,200, with 89 per cent polys.

The patient was operated upon by Dr. J. Shelton Horsley, under ethylene anesthesia. A ruptured duodenal ulcer was found, with free cloudy peritoneal fluid present. The perforation was closed as in the previous cases, but here the ulcer crater was not cauterized, and the peritoneal cavity was drained. There was a mild bronchitis for a few days following the operation and a moderate amount of infection of the abdominal wound; otherwise the post-operative course was uneventful and the patient was discharged thirty-five days following the operation.

Ten days after discharge from the hospital, the patient developed lobar pneumonia, which was followed by an empyema. Following drainage of the pleural cavity, he developed a bronchial fistula but after several weeks entirely recovered and is now in excellent health.

Case No. 5.—Mr. W. K., age 30 years. Patient gave a history of sudden onset of pain six hours before admission and a vague history of hunger pains and digestive disturbances previous to the present illness. The pain was first in the epigastrium, but gradually settled in the lower abdomen. On examination there was marked rigidity and tenderness through the entire abdomen, being more marked on the right side; otherwise negative. A diagnosis of ruptured appendix or perforated peptic ulcer was made. He was operated upon by Dr. John S. Horsley, Jr., under ethylene-avertin anesthesia. Through a McBurney incision, the appendix was found to be only slightly congested but a large quantity of cloudy yellowish fluid containing small particles of food was found. The appendix was removed. An upper right rectus incision was made, and a perforated ulcer on the anterior surface of the first part of the duodenum was found. The perforation was 1 cm. in diameter and the indurated area about 2 cm. The ulcer crater was destroyed with the electric cautery and this opening into the duodenum extended parallel to its long axis for about 3 cm., carrying it past the pyloric sphincter. The wound in the duodenum and stomach was then closed with interrupted 00 tanned catgut in a manner similar to that used for the Horsley pyloroplasty. The long ends of the last row of sutures were passed through adjacent peritoneal covered fat, covering the suture line. All of the free fluid was removed with the suction apparatus and the peritoneal cavity was drained through a stab wound and the McBurney incision with cigarette drains and rubber tubes.

There was a moderate amount of purulent discharge through the drains and the midline incision became infected. However, this was not severe and otherwise the patient made an uneventful recovery. The temperature and pulse became normal after the eleventh day, the temperature never being higher than 100° F. He was discharged on the twenty-second post-operative day, and has had no further trouble.

Case No. 6.—Col. W. T. G., age 58 years. Twelve hours previous to admission the patient had a sudden, severe attack of epigastric pain which persisted and was not relieved by morphine. At no time was there nausea or vomiting. He gave a history of indigestion and ulcer symptoms for twenty years and has been treated for a peptic ulcer at intervals since then by various doctors, having refused an operation. Examination showed the abdo-

men rigid, with extreme tenderness, especially in the epigastrium. The physical examination was otherwise negative. The hemoglobin was 70 per cent, W. B. C. 10,000 with 90 per cent polys.

At operation, under ethylene-ether anesthesia, the peritoneal cavity was found to contain a large quantity of free murky fluid. On the anterior wall of the duodenum a perforated ulcer was found, the hole being 1 cm. from the pylorus. The perforation was closed as in the first two cases, but without using the electric cautery. A large amount of free fluid was found in the pelvis, so a stab wound was made just to the right of the midline in the lower abdomen and a large drainage tube inserted. The pelvis was washed out with saline solution and the free fluid withdrawn with the suction apparatus.

The patient made a fair recovery immediately following the operation, but at the end of a week did not continue to improve. A transfusion of 480 c.c. of blood was given by the syringe method and from then he had a normal convalescence. There was only a slight infection of the incision, which soon healed without much trouble. The patient left the hospital forty-two days after operation and has continued well.

Case No. 7.—Mr. T. P. D., age sixty-two years. For two months the patient had rather atypical symptoms of ulcer. X-ray pictures taken elsewhere two weeks previous to admission did not show the presence of an ulcer and a gastric analysis gave a low acidity. Two hours previous to admission, while going to lunch, the patient had a sudden, sharp, cramp-like epigastric pain, without nausea or vomiting. The pain soon spread over the entire upper abdomen. Physical examination showed the abdomen board-like and extremely tender. W. B. C. 11,200 with 90 per cent polys., hemoglobin 70 per cent.

The patient was operated upon by Dr. J. Shelton Horsley, under ethylene-ether anesthesia. There was found in the peritoneal cavity a small amount of free fluid which appeared to be pocketed about the duodenum. A perforated ulcer was demonstrated on the anterior upper wall of the duodenum one-half inch from the pylorus. The perforation was closed as in the previous case. There was no drainage of the peritoneal cavity. The patient had a long but fairly satisfactory convalescence. A severe infection of the abdominal wall developed which finally healed and the patient left the hospital on the fifty-fourth post-operative day.

Case No. 8.—Mr. B. S. P., age 42 years, was admitted to the hospital complaining of acute agonizing abdominal pain for about three hours which came on suddenly and continued to increase. He had had digestive disturbances for the past eight years, with nausea and vomiting, and typical ulcer pains for the past year which were relieved by milk. There had been no passage of blood nor blood vomiting. The acidity was high. Examination showed the abdomen rigid throughout and extremely tender, more marked in the epigastrium, and the patient appeared to be in intense pain in spite of having received 2/3 gr. of pantopon. The blood pressure was 164/100. Physical examination was otherwise negative. W. B. C. 16,200, polys. 90 per cent.

He was operated upon under ethylene anesthesia, by Dr. J. Shelton Horsley, about three hours after the first symptoms of rupture occurred. Free turbid fluid was found in the peritoneum; this was removed with suction and flushed with saline. A small perforation about ½ cm. in diameter and somewhat oblong was found in the anterior wall of the duodenum just beyond the sphincter. The perforation was closed with three rows of 00 tanned catgut sutures, the first being applied as a mattress suture, the second as a continuous, and the third as interrupted mattress sutures; the ends of this last were left long, threaded in a needle and passed through adjacent peritoneal covered fat and tied, so bringing this over the sutured ulcer as in the previous cases. Due to the marked induration about the duodenum, occlusion was evident, so a posterior gastroenterostomy was also done. The peritoneal cavity was not drained.

The patient made an uneventful recovery; there was some redness about the incision for the first seventy-two hours, which disappeared under hot wet dressings. He had normal temperature and pulse after the third post-operative day and left the hospital on the twenty-sixth day feeling well and has remained so.

In all cases approximately the following post-operative care was followed: Nothing is given by mouth for the first twenty-four hours and then only small quantities of water. Five

per cent dextrose in Ringer's solution is given intravenously continuously for twenty-four to forty-eight hours and then about 2,000 c.c. every day until the patient is able to take small amounts of food, such as gruels, malted milk, etc. The patient is placed in Fowler's position for several days and a gastric lavage is done only if indicated by vomiting. The patients usually leave the hospital on some bland diet, and an alkaline powder is given if indicated by the gastric analysis which is done before the patient leaves the hospital.

It is interesting to note that those patients with a high gastric acidity had very little, if any, infection of the abdominal wound, while one with a low acidity had a severe infection. The best results seemed to be obtained in those cases in which the perforation was immediately sutured, without the preliminary cauterization of the ulcer crater. The method of draining through stab wounds seems to give excellent results, and in this way the incisions can be completely closed. There have been no cases of post-operative hernia. As a rule, those cases that have been perforated from four to six hours are not drained.

SERUM DIAGNOSIS OF SYPHILIS.*

By MARY E. ROCHE, M. D., Norfolk, Va.

Wassermann, Neisser and Bruck, in 1906, published their results on the serologic diagnosis of syphilis by the complement fixation test, utilizing the phenomenon of Bordet and Gengou. At first the reaction was thought to be a true antigen-antibody reaction. It is well recognized, however, that the body in a syphilitic serum which reacts with the antigen is not an amboceptor, but a lipoidophilic substance which has the property of linking complement. The name "Reagin" has been proposed for this lipoidal substance. The complement fixation tests most commonly used to detect the syphilitic reagin is the Wassermann and its modifications, an anti-sheep hemolytic system, or Noguchi, with its anti-human system being used.

The Wassermann test has been for years an almost indispensable aid in the serum diagnosis of syphilis, and has been used in hospital and health department laboratories throughout the country. Within the last ten years more and more attention has been given to the precipitation reactions.

The importance of a precipitation test for syphilis is generally recognized. Such a test requires but one basic reagent beside the serum; is comparatively simple in its performance, and is free from many sources of error inherent in a complement fixation test. The phenomenon of precipitation with syphilitic sera was observed soon after that of complement fixation, and many attempts have been made to apply this phenomenon in the development of a precipitation test for syphilis. Porges and Meyer in 1908, Michaelis and Meinke in 1917, Sachs and Georgi in 1918—and among the more recent are Kahn, Hinton, Kline, Johns, and Bass. Kahn in 1921 began to study the precipitation reaction with syphilitic sera, and found the following governing principle essential for the best results:

(1). Concentration of the ingredients which enter into the test.

(2). High instability of the antigen dilution.

(3). Correct quantitative relation between serum and antigen.

(4). Hastening the union between serum and antigen by agitation.

By applying these principles and paying particular attention to the standardization of the antigen and technique, Kahn has developed a test which aside from its apparent specificity and uniformity of results, possesses the practical advantage of being completed within a few minutes of mixing the ingredients. The Kahn test comprises five procedures:

(1). The routine test—qualitative.
(2). The quantitative procedure.
(3). The presumptive test.
(4). The qualitative test for spinal fluid.
(5). The quantitative test for spinal fluid.

Three reagents are employed; the antigen, serum, and physiological salt solution. The technique is very simple, but calls for exactness in every detail,—chemically clean and dry glassware, and accurately standardized antigen and physiological salt solution. I will not go into details of the test except to say that it is the Kahn Standard Precipitation Test with three tubes of serum-antigen-dilution,—varying amounts of antigen in each tube, and inactivated undiluted serum, and shaken in a mechanical shaker for three minutes, and 1 c.c. of normal saline added to the first row of tubes to make them read more easily: after five minutes the results are read. With

*Read before the Norfolk County Medical Society, March 16, 1931.

the proper technique and experience the results are as a rule easily read. If only one test is used, the standard Kahn three tube test is the one of choice. The only disadvantage of the Kahn is the difficulty some workers have in reading the precipitates, which closely resemble the macroscopic bacterial agglutination tests. This disadvantage is overcome by the addition of a control hemolytic system in the Kahn tube, and the results read in the same manner as the Wassermann test. After Kahn's are read, complement 1/10 c.c. is added to the second or third tube, as these contain the smallest amount of serum-antigen mixture. Incubation can be done by the overnight icebox method, but just as accurate results are obtained by thirty minutes in a water bath at 38° centigrade; then the ambocepter and corpuscle emulsion are added and incubated one-half hour, or until hemolysis is complete in the control tubes. They can be read at once by centrifuging the tubes in which there is no or incomplete hemolysis, or by putting in the icebox overnight for the cells to settle, and reading the next morning. This makes a perfect control, and is comparatively simple.

We have used this type of control with our Kahn's and found it very satisfactory. The complement fixation test was always positive in cases which gave a positive Kahn.

We have been running Kahn tests parallel with our Wassermanns since January 1, 1927 —10,882 tests in all. The types of syphilis considered were congenital, primary, secondary and tertiary. In congenital, primary and secondary syphilis, Kahn and Wassermann agreed. In tertiary cases in which Kahn was 4 plus, 7 per cent showed a weakly positive and 19 per cent a negative Wassermann. The tests reported here were taken on the first visit to the clinic, before treatment was begun. During treatment it was not unusual for the Kahn to remain positive, while the Wassermann was weakly positive, or negative.

Conclusions

While the Kahn does not detect all cases of syphilis, it certainly approaches the maximum of any serum test so far devised. It has become an accepted procedure for the serum diagnosis of syphilis in the United States Navy and the Michigan Department of Health. The superiority of the Kahn over the Wassermann test is shown by an analysis of the results obtained at a competitive serological conference of the League of Nations Health Committee held at Copenhagen in 1928. Seven Wassermann methods and seven precipitation tests, including the Kahn, were put to a practical trial in the examination of approximately 1,000 serums, half of which were from syphilitic patients. The Kahn test was one of a group of four methods that did not give a positive reaction in non-syphilitic cases, and it was more sensitive than the other three to the extent of 20—45—and 55 per cent. The Kahn was not only free from false positive results, but remarkable for its sensitiveness.

Note:—The material for this paper was taken from the records of the laboratory work at St. Vincent's Hospital, and includes the hospital patients and the outpatients clinic department.

613 *Medical Arts Building.*

AGRANULOCYTOSIS—REPORT OF CASE WITH THREE RELAPSES.

By CARL GOLDENBERG, M. D., Washington, D. C.

W. W., 59 years old, a painter, consulted me at my office on December 2, 1929. He complained of severe pains in his throat, which had started a few days previously. He suffered from considerable dysphagia and felt very exhausted. There was an annoying bitter taste in his mouth; several times he had vomited and his sleep had become very poor. When he attempted to rest in bed he felt choked. During the last 2 days he had several chills and occasional abdominal pains.

Family History: Father died of apoplexy, mother of angina pectoris. One brother is living. Patient is married, but has no children.

Past History: Childhood: Chicken-pox, scarlet fever, typhoid fever. Adolescence: Two years ago furunculosis of several months duration. 1929: Lumbago. Potus and venereal diseases denied.

First Examination: Height—64 inches. Weight—137. Temperature—98. Pulse—130. Respiration—18. R. ear—otitis chronica media, acquired during war. Both tonsils are quite large, dark red, covered with a thick mucous discharge. The entire laryngo-pharynx is of the same dark red color and considerably swollen. Muco-purulent discharge from the nose; a sinusitis ethmoidalis is found on examination by Dr. Davis.

Circulatory System: Heart not enlarged, precordial systolic murmur present. Blood pressure—140/90 m.m. Hg.

Pulmones: Free from pathological changes.

Abdomen: Some meteorism present.

Nervous System: No abnormal reflexes. Sensibility intact.

Genito-Urinary System: Intact.

Patient was advised to go to bed, but went to work instead. The following afternoon W. felt completely exhausted and was put to bed.

Second Examination: December 4—Shooting pains in the right ear, increased dysphagia and considerable pain in his throat. Temperature—100.4. Pulse—132. Patient was subicteric and appeared quite toxic. The previous findings in his naso-pharynx and tonsils seemed to be intensified.

A blood count was made with the following results: Haemoglobin—78 per cent; erythrocytes—5,300,000; leucocytes—400, with 100 per cent lymphocytes. A second leucocyte count later in the afternoon revealed 900 white cells, with 100 per cent lymphocytes.

A *diagnosis* of agranulocytosis with angina was made, and the patient transferred to Emergency Hospital.

Therapy recommended: X-ray stimulation, cardio-vascular stimulantia.

Course: December 6th—Left tonsil, uvula, and pharynx are covered with thick mucous discharge; the dark red color is interrupted by streaks of a yellow pseudo-membrane. Cervical lymph glands on the left side are swollen. Patient is in apparent stupor. Icterus quite noticeable. Foetor ex ore. Temperature—100. Pulse—132. Urinalysis: Positive for albumen, hyaline cylinders and a few leucocytes. (For blood picture for this and following days see Table.)

December 7th.—Same status. Temperature—103. Pulse—130, and weak. The pseudomembrane changed its color into gray-white, especially over left tonsil.

December 10th—Left tonsil fully necrotic.

December 13th.—Necrotic tissue removed. The tonsillar grove bright red; no hemorrhage noted. Temperature dropped to 97.8. Pulse—108. Patient looks brighter, has lost his bitter taste in the mouth and takes food.

December 15th.—Cellulitis left arm, following repeated subcutaneous injections of digifoline and coramine. Subicterus has disappeared.

December 19th.—Abscess of arm opened, discharging a thick, creamy pus. Temperature—98.4. Pulse—90. Tonsillar ulcus covered with good granulations. Dysphagia has disappeared.

December 27th.—Patient makes noticeable improvement.

January 4, 1930.—Patient out of bed. A renewed fall of the leucocytes to 2,900 necessitates resumption of X-ray therapy.

January 10th.—Further improvement noted. Patient has an almost ravenous appetite. Pulse and temperature normal. Naso-pharynx and abscess on arm completely healed.

January 23d.—Patient discharged from hospital. Weight 148.5 lbs. Blood picture on discharge: Leucocytes — 4,300 differential; lympho.—30 per cent; monos.—5 per cent; polys.—65 per cent; myelocytes—5; juvenile forms—8.

Additional laboratory tests performed during this acute period:

Culture from throat December 14th—Streptococcus haemolyticus; micrococcus catarrh; staphylococcus aureus.

Blood culture taken December 8th—Sterile after six days.

Urinalysis December 28th—Albumen negative; occasional leucocyte; mucous threads; occasional epithelial cell.

Wassermann reaction December 6th—negative.

Kahn Test December 6th—Negative.

Interval: After discharge of the patient he remained at home. Clinically, he offered no complaints nor any visible signs of gross pathology. His strength and vigor were surprising, his appetite was very good, and his weight showed a further increase. His libido, previously dormant, returned. Gradually, the patient was allowed to take short walks. Temperature averaged 98—98.6 on bi-weekly examinations. Pulse, regular, around 80. Blood pressure: 140/90. His throat had healed, taste had returned and there was no difficulty of swallowing solid food. However, his blood picture remained conspicuously leucopenic (cf. chart).

On March 13th, the patient complained of severe shooting pains in his left arm. He attributed them to an accident he had two days before when he was struck by a bicycle. An examination did not show any injury to the bone or soft tissues of the arm. There was marked tenderness on percussion of radius. The pains increased in the following week and did not subside in spite of analgesics. Pa-

tient became very restless and irritable, and within a few days only had lost most of his vigor. On March 27th the blood picture showed such marked agranulocytosis that he had to be readmitted to the hospital.

Relapse: Examination of the throat revealed a marked reddening of the mucous membrane and dysphagia embarrassed the patient again. Temperature—100-102, with correspondingly rapid pulse and considerable toxic appearance. On April 5th a yellow pseudomembrane was noticed covering the left side of the soft palate and extending downward towards the pharynx. Abdomen: meteorism, profuse diarrheas, tenesmus. External haemorrhoids became quite large and painful. Some of them were bleeding slightly. After three days, meteorism and diarrhea stopped. Temperature and pulse returned to normal. Less toxic appearance. Tongue was very much coated. There was no sign of necrosis in throat or pharynx. Dysphagia disappeared. Further improvement was noted from April 8th until April 24th. The blood picture, however, remained extremely leucopenic; its response to X-ray remained feeble. Efforts to stimulate it by means of nonspecific protein injections (activin) seemed to bring no change. In striking contrast to this poor blood reaction, the patient's clinical appearance was really surprising.

On April 24th, there was relapse and rapid decline. The patient suffered great pains in ano; his haemorrhoids were large and protruding, one of them showed beginning ulceration. Patient became rapidly toxic and stuporous. The abdomen was quite distended, and many watery, frothy stools were ejected, some having streaks of blood. Temperature curve became septic in character, pulse weak and rapid. Tenesmus and diarrheas remained unchecked. The anal ulcer grew in size and, covering a considerable para-anal area, became necrotic.

On May 3d, muscular defense appeared over left lower abdomen, the patient had facies Hippocratica. There was circulatory failure and pulmonary edema.

May 5th: Exitus lethalis. Autopsy could not be obtained.

Therapy: Encouraged by reports of cures (Friedeman), X-ray radiation was done by Dr. McPeak. A daily exposure of small areas of the long bones was done (20 per cent E. D.). Starting with one area of the left anterior femur, the patient was given on each succeeding day an equal dosage to the right anterior femur, to the right anterior humerus, to the left anterior humerus and to the sternum, to the right lower leg, to the left lower leg and to the right forearm.

The white cell count having reached 3,000 and the patient's condition greatly improved, we (Dr. McPeak and the author) decided to discontinue treatment and watch the further progress. While this series of X-ray radiations was being given no other stimulating agent to the bone marrow was used. Cardiac stimulants were necessary during the first few days and a mouth wash was employed. It was indeed gratifying to notice the response of the granulopoetic system to the stimulation. The accompanying chart illustrates the change; however, the appearance of endotheliocytes in the picture showed the severity of the case quite clearly. After December 13th, the patient was watched and the white cells increased steadily until the 4th of January, 1930, when we noticed a fall in their numbers, which necessitated a resumption of X-ray applications for three days (right forearm, left upper leg, right upper leg). When the patient was discharged, it was felt that he had a good chance for recovery. However, the application of X-ray proved to be a transitory reaction; subsequent stimulation during the following relapses brought only weak responses from the granulopoetic system. In spite of the therapeutic failure, I have gained the impression that X-ray stimulation may become a helpful weapon in fighting against this apparent hopeless condition. During the second relapse I tried to support the X-ray therapy by intramuscular injections of a foreign proteid (Yatre-casein). It did not produce the desired result. Perusing the current literature one gains the impression that all therapeutic efforts have been largely empirical. The response to treatment depends upon many factors, the greater part of which seems still unknown. The pathogenesis of the disease is still clouded.

The Blood Picture: Although a blood picture was not made until the third day of observation, it is safe to assume the presence of agranulocytosis from the onset of clinical symptoms. In spite of the negative blood culture the clinical picture resembled a massive infec-

tion, a true sepsis. But it will be noted throughout the entire course of the disease that at no time did any severe secondary anemia appear. Likewise, there never was a haemorrhagic diathesis. The blood platelets, although not counted, were present in large amounts. In this respect the condition differed widely from the average septicaemia. It is far more likely that the granulopoetic system had been weakened by previous infections.

Right from the onset the blood picture showed the presence of endotheliocytes in ever increasing amount. The monocytes, too, reach amounts, specially during the first and second relapses, far beyond their normal count (4-8 per cent). Thus, it seemed as if the body was rapidly emptying its reservoirs of active phagocytic soldiers; the presence of endotheliocytes and increasing numbers of monocytes were the sign of a general levee en masse. This

Haemograms
1st Attack

1929	Haemogl.	Reds	Whites	Lymph.	Endo.	Mono.	Neutro.	Eos.	Pathologic
12/5	78%(D)	5300M	900	100%	.....	.....	.....	.....	.....
12/7	70%	3920M	360	99%	.....	.....	1%	.....	.....
12/8	68%	3700M	555	100%	.....	.....	.....	.....	.....
12/9	68%	3810M	430	98%	.....	.....	2%	.....	.....
12/10	69%	3850M	370	91%	2%	.....	7%	.....	.....
12/11	70%	3950M	1240	68%	3%	1%	28%	.....	.....
12/12	not counted		2300	48%	3%	2%	47%	.....	1 myelocyte
12/13	not counted		3000	21%	3%	7%	69%	.....	1 myelocyte
12/14	68%	3880M	4700	13%	1%	1%	85%	.....	7 myelocytes
12/15	70%	4010M	6500	18%	.....	1%	81%	.....	3 myelocytes
12/16	71%	4120M	6400	16%	.....	2%	82%	.....	6 myelocytes
12/17	72%	4090M	6600	10%	5%	3%	82%	.....	6 myelocytes
12/18	72%	4150M	6400	16%	1%	2%	81%	.....	2 myelocytes
12/19	71%	4010M	5900	20%	.....	5%	75%	.....	1 myelocyte
12/20	71%	4080M	6400	14%	2%	2%	82%	.....	.....
12/21	71%	3920M	5400	17%	3%	3%	77%	.....	1 mast cell
12/23	71%	4060M	4700	15%	3%	1%	81%	.....	.....
12/24	70%	4020M	5200	19%	1%	1%	79%	.....	.....
12/26	71%	4110M	5300	16%	2%	3%	79%	.....	.....
12/28	70%	4050M	5800	20%	2%	1%	77%	.....	.....
12/30	not counted		4400	25%	2%	3%	68%	2%	.....
12/31	71%	4100M	5500	27%	1%	1%	71%	.....	.....
1930									
1/2	72%	4040M	5700	35%	2%	2%	60%	1%	.....
1/4	73%	4200M	4300	40%	3%	2%	55%	.....	.....
1/6	73%	4130M	3000	28%	3%	8%	60%	1%	.....
1/7	not counted		4100	31%	3%	1%	64%	1%	.....
1/8	not counted		3200	37%	0	4%	59%	.....	.....
1/9	not counted		2900	25%	1%	3%	71%	.....	.....
1/10	not counted		3300	26%	0	3%	71%	.....	.....
1/11	not counted		3500	26%	1%	10%	62%	1%	1 myelocyte
1/13	not counted		3500	31%	1%	3%	65%	.....	2 myelocytes
1/15	not counted		3800	26%	1%	2%	71%	.....	5 myelocytes
1/17	not counted		4100	18%	0	4%	78%	.....	2 myelocytes
1/18	not counted		3900	19%	4%	2%	75%	.....	.....
1/20	not counted		4300	21%	4%	2%	73%	.....	.....
1/21	76%	4220M	3400	17%	2%	6%	75%	.....	4 myelocytes
1/22	not counted		4300	30%	.....	5%	65%	.....	5 myelocytes
1/23	Patient discharged.								

Interval at home—leucopenia

1/29	not counted		3400	42%	4%	.....	54%	.....	.....
2/5	77%	4080M	2900	36%	3%	2%	58%	1%	.....
2/14	not counted		3400	25%	3%	4%	68%	.....	.....
2/20	not counted		3400	29%	3%	7%	61%	.....	.....
2/27	not counted		4200	41%	2%	.....	56%	1%	.....
3/6	79%	4160M	4000	37%	3%	2%	57%	1%	.....
3/13	not counted		3300	32%	4%	3%	59%	1%	mast cell 1%
3/18	79%	4180M	3300	33%	2%	.....	64%	1%	.....

extramedullar effort showed the complete breakdown of granulopoesis, and remained the grave indicator of the hopeless situation.

This case of agranulocytosis lasted for 5 months and showed a periodicity of events strikingly similar to those described by Roberts and Kracke.

Bacteriology: In spite of repeated efforts, no blood culture could be obtained, while the smear from the tonsils revealed the presence of various species of bacteria. It cannot be said whether these germs play a causative role in the case or are mere parasites without pathological effect.

Clinic: A few days after the onset, the laryngo-pharyngitis turned into a necrobiotic form, preceded by a pseudomembranous state. Quite in contrast to the trivial swelling and inflammation of the mucous membrane there appeared as an early symptom a considerable

2d Attack at Hospital

1930	Haemogl.	Reds	Whites	Lymph.	Endo.	Mono.	Neutro.	Eos.	Pathologic
3/27	not co	unted	1200	73%	3%	8%	16%	.....	.....
3/29	not co	unted	620	65%	2%	33%	.....	.....	.....
3/30	not co	unted	440	84%	2%	14%	.....	.....	.....
3/31	not co	unted	620	81%	6%	13%	.....	.....	1 myelocyte
4/1	not co	unted	430	79%	3%	18%	.....	.....	.....
4/2	not co	unted	430	78%	4%	18%	.....	.....	.....
4/3	not co	unted	330	81%	1%	18%	.....	.....	.....
4/4	80%	4220M	320	74%	4%	22%	.....	.....	.....
4/5	not co	unted	420	75%	2%	15%	8%	.....	.....
4/6	not co	unted	780	50%	2%	8%	40%	.....	6 myelocytes
4/7	not co	unted	1100	33%	1%	11%	55%	.....	3 myelocytes
4/8	not co	unted	1500	37%	.....	8%	55%	.....	1 myelocyte
4/9	not co	unted	1700	25%	.....	15%	60%	.....	2 myelocytes
4/10	not co	unted	2400	17%	1%	10%	72%	.....	3 myelocytes
4/11	not co	unted	3200	25%	1%	10%	64%	.....	2 myelocytes
Period of clinical improvement—persistent leucopenia									
4/12	not co	unted	2900	30%	1%	9%	60%	.....	.....
4/15	not co	unted	2700	34%	1%	6%	59%	.....	.....
4/16	not co	unted	3100	40%	.....	4%	56%	.....	.....
4/17	not co	unted	3100	35%	3%	9%	53%	.....	2 myelocytes
4/18	not co	unted	2500	37%	2%	5%	56%	.....	1 myelocyte
4/19	not co	unted	2400	22%	2%	3%	73%	.....	.....
4/20	not co	unted	2600	42%	2%	5%	51%	.....	.....
4/21	not co	unted	3000	30%	2%	4%	64%	.....	.....
4/22	not co	unted	2100	28%	3%	5%	64%	.....	1 myelocyte
4/23	not co	unted	2200	37%	2%	9%	62%	.....	.....
4/24	not co	unted	1500	67%	8%	14%	11%	.....	.....

3d Attack—Prominence of Abdominal Symptoms

1930	Haemogl.	Reds	Whites	Lymph.	Endo.	Mono.	Neutro.	Eos.	Pathologic
4/25	not co	unted	1700	78%	6%	13%	3%	.....	.....
4/26	not co	unted	1300	90%	3%	7%	.....	.....	.....
4/27	not co	unted	1300	84%	3%	13%	.....	.....	.....
4/28	not co	unted	1200	86%	6%	8%	.....	.....	.....
4/29	not co	unted	800	88%	5%	7%	.....	.....	.....
4/30	not co	unted	1200	86%	4%	10%	.....	.....	.....
5/1	not co	unted	1700	86%	4%	10%	.....	.....	.....
5/2	not co	unted	600	83%	4%	13%	.....	.....	.....
5/3	not co	unted	700	80%	7%	13%	.....	.....	.....
5/4	not co	unted	300	88%	.....	12%	.....	.....	.....
5/5	not co	unted	260	91%	.....	9%	.....	.....	.....
	Exitus.								

dysphagia and a complete loss of taste. Within a few days the patient became rapidly toxic in appearance, and his circulation precarious. However, soon after the first reappearance of granulocytes this toxicity disappeared,—in spite of the progressive necrobiosis of the tonsil. The same phenomenon was noted during the first relapse, and seemed to occur during the initial stage of the second relapse. The clinical symptoms towards the end pointed to an involvement of the peritoneum, probably an ulcus penetrans, in as much as there were signs of rigidity in the left lower quadrant and pains over the same area. Unfortunately, an autopsy could not be obtained to clear up the diagnosis.

Conclusion: Agranulocytosis seems to be a symptom of a very severe, massive infection. The inhibition of granulopoesis or the destruction of the granulopoetic apparatus is apparently unaccompanied by a similiar action on the erythropoetic system and the platelets; hence absence of appreciable anaemia and purpura. In prolonged courses of the disease, large amounts of endotheliocytes and monocytes seem to appear, which may be interpreted as an extramedullar effort to meet the exigency. Necrobiosis is due to the absence of granulocytes. The therapeutic effect of X-rays, though undoubtedly present, seems to be just as great or as small as any other agent employed.

LITERATURE

W. Schultz & Leo Jacobowitz: Die Agranulocytose. *Med. Klin.*, 1925, No. 44, page 1642.
Friedeman, D.: *Med. Woch.*, December 23, 1927, 53: 2193.
Roberts & Kracke: Agranulocytosis, *J. A. M. A.*, 95:780, 1930.

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Miscellaneous

The Duties of a Rural Public Health Nurse As Formulated in Virginia.

(The following are extracts from a paper published by Dr. B. B. Bagby, Director, State Bureau of Child Health, in *The Echo*, for the guidance of his nurses.)

The problems of a single nurse working in a county of from 10,000 to 40,000 are very different from those of the average urban public health nurse. How to do the greatest good to the greatest number in the shortest time, is the problem of the county nurse. The experience of the writer has convinced him that the way to solve this problem is first, to use every effort to promote and coordinate the various health activities of existing community organizations that are seeking for channels of usefulness. It will rarely be necessary to form additional organizations.

Experience proves that the best results are obtained through educating the educated and especially the educator. One of the first duties of the nurse then is to so enlist the interest of the teachers in teaching health that they will not only teach from the textbook but will correlate health with every subject taught in the school. Other activities of the nurse in the school program are: (1) To assist the superintendent, principal, and teacher in carrying out a well-rounded health program. (2) To visit the schools and when necessary help the teachers to make the physical inspection, and instruct them in the best means of controlling communicable diseases. (3) To make home visits when requested by the teacher, to induce parents to arrange for the correction of defects. (4) To coordinate the activities of the school authorities, the Home Demonstration Agent, the Parent-Teachers Association, and the Cooperative Education Leagues, or other organizations so as to provide hot lunches, milk or other aids to health for every child. (5) To work with the school officials, the neighborhood physicians, and the Leagues or Parent-Teachers Associations to put over a Beginners' Program. (6) To assist the school authorities and other agencies to celebrate an appropriate Child Health Day.

(Several succeeding paragraphs of Dr. Bagby's paper deal with subjects not directly interesting to physicians: Practical suggestions for active cooperation of the nurse with local organizations such as the Cooperative Education Association, Parent-Teachers Association, Home Economics and Agricultural instructors, churches, and Social Service workers.)

GROUP INSTRUCTION

When local organizations have been induced to take up some form of health work, the next most important duty of the nurse is to guide them in the best ways of doing this work. Mass teaching is perhaps the most effective means. Public Health nurses in Virginia are instructed to carry on at all times at least one

class in Home Hygiene and Care of the Sick. In these classes she places especial emphasis on nutrition, sanitation and disease prevention. She never neglects an opportunity to address a club or society.

Home Visits

When a communicable disease is reported by the physician, the nurse visits the home and teaches the occupants the reasons for observing the quarantine laws and for making the premises sanitary. She arranges with the physician to immunize against smallpox, diphtheria, or typhoid fever. She assists the physician in urging T. B. patients to secure sanatorium treatment, and teaches these patients how to protect others; she also helps to secure a physical examination for the contacts and teaches the general rules of health. Suitable health literature is left with the patient. No home visits for communicable disease control or any other educational purpose, is complete without leaving some literature. One main objective of every home visit is to stimulate interest in health as to secure the reading of these health bulletins.

The nurse in an average county, who conscientiously carries out the program so far outlined, has little time for other home visits. In some instances, however, it may be necessary for her to make a home visit in connection with the pre-school and school work in order to help secure a physical examination and the correction of defects. The responsibility for the correction of these defects is, however, with the teacher in the case of the school child, and in the case of the pre-school child, with the organization sponsoring the Beginners' Program.

The chief purpose in making a maternal visit is to urge that every expectant mother be examined by a physician at least once before and once after delivery. Every mother is urged to nurse her baby and to wean her baby only with the consent of her physician. Suitable literature is left in this as well as in every other educational visit. The expectant mother is urged to take the Correspondence Course for Mothers.

From the above we see that there is a wide gap between the usual conception of a Public Health nurse with her little black bag, and the nurse who is an organizer, a teacher, and a collaborator in the interests of health with every good work in the community.

Annual Congress on Medical Education, Medical Licensure, and Hospitals.

Dr. P. W. Boyd, Winchester, Va., president of the Virginia State Board of Medical Examiners, was appointed by Governor Pollard as the member of the Board to attend the Annual Congress on Medical Education, Medical Licensure and Hospitals, held in Chicago, February 17-19, 1931. The following is a summary of his report as presented to members of the State Board of Medical Examiners at its meeting in Richmond in June:

I herewith submit my report of the meeting of the Annual Congress on Medical Education, Medical Licensure and Hospitals. This meeting was of much more interest than the one in 1930, probably because I had become acquainted with more of the delegates and because of their friendly attitude toward all the members present.

There was a symposium on the care of the mentally ill in the United States, the first speaker being Dr. Ray Lyman Wilbur, Secretary of the Interior, whose subject was "Mental Health as a National Problem." He advocated the open staff for all mental hospitals. His idea was to allow all physicians in each state to treat their own patients in the state hospitals, which idea did not seem to take very well. He urged more autopsies, stating it afforded more opportunities of reviewing the doctor's mistakes. Most of the patients were of middle age and had been treated for various diseases, having had the tonsils, kidneys, uterus, ovaries and what not removed without the cause of the mental disease being discovered. He advised that more stress be laid on the study of the endocrine organs—especially the thyroid gland.

I was surprised to hear him state that at St. Elizabeth's Hospital, Washington, D. C., there are one hundred buildings, five thousand beds, and twelve hundred employees. All are departments of our government giving special care to mental hygiene.

Dr. Charles P. Emerson, Dean of the Indiana School of Medicine, presented a paper on "The Present Trend of Medical Education," which was very well received. He does not favor the now popular way of patients being handed from one specialist to another for a diagnosis, stating that the medical man who saw his patient for two minutes, then sent him through the medical machine to the other consultants, sees a number of patients in a day and pro-

duces the volume but the products of his work are not the best. He said, "it is good business but damn poor medicine." He spoke of the laboratory reports being most valuable and did not dare belittle the laboratory, though many men attempted to take a short cut for a diagnosis along this route. His idea was that it gave valuable evidence. The more laboratory work done on a patient the harder one must study his patient. The man back of the microscope who will give his opinion must be well qualified to give a correct one. He stressed the individual studying the patient himself, especially a history well taken, before arriving at a conclusion. It appeared to him that since the war the standard of the doctors seems to be gauged by the dollar mark. Before the war a good doctor may have had a poor automobile and threadbare clothing but his standard was relieving the sick man. Medicine should essentially be altruistic in our profession. He felt that fee splitting and commercialism had entered into our profession to an alarming degree. He stated that 80 per cent of the patients in a certain clinic—did not mention the clinic—who were neurotics had had from one to nine operations performed and no accurate diagnosis made. The desire of the student to practice a specialty makes him forget he is a general practitioner. He should know general medicine before he picks out a specialty, though will probably be the first man to use new serums, the X-ray, and to have all modern equipment in his office, instead of understanding the relative values of symptomatology, physical findings, and histories of his patients. He is about to commercialize his profession. The student should first be taught to swim by having him read the titles of the articles published in the better medical journals; teach him to accept a line of thought and not to accept all the book data as it is now published. Also, teach the recent graduate he cannot give the patient in private practice all the advantages and means of diagnosis owing to expensive equipment necessary in a modern laboratory. He must learn to rely upon his knowledge of common sense, observation, and finally experience, in reaching conclusions.

Another interesting paper was by Dr. Wilburt C. Davison, Dean of Duke University School of Medicine, Durham, N. C., whose subject was, "The Significance of Present Entrance Requirements." He advocated the acceptance of those students only who have exceptional ability. Poorer minds should be rejected in the beginning. The present standard requirements are four years of College but he urges the quality of preparation instead of the number of semester hours. He believes the student requires culture at home and not at college, and at college knowledge and not culture. If a man could have two years at college instead of four years and take longer internship at the hospital he would make a more useful man in the profession. In selecting the candidates at Duke, the requirements for entrance are: first, a letter from the candidate himself; second, a confidential letter from his science teacher; third, a personal interview. The latter he considers the most valuable aid in reaching a conclusion as to which applicant should be accepted.

Dr. Willard C. Rappleye, of New Haven, Conn., spoke on "Methods of Examining Students in Europe." He stated that when a man graduated from the European schools it carried with it the right to practice medicine. Sometimes a student would be in a school for twenty years and not able to practice because he had not met the requirements, as they can keep repeating, and do so as often as the student pleases.

In Germany the examinations are uniform throughout the country. At least 80 per cent will pass the examination and the other 20 per cent will repeat. In the examination in Anatomy and Pathology he must do autopsies as well as pass the written examinations. The student also goes into the wards, takes histories, keeps the charts, prepares records, etc., and then he is given an examination. At the end of this period he holds autopsies, treats patients, and is examined by his chief in this department.

France has only nine medical schools that can grant medical degrees. The hospital examinations are more important than those in the colleges. Internship in France is four years and they are not allowed to graduate until they have had this internship. Besides this, they must have two solid years of lectures and demonstrations before they can have a degree of doctor, and take one year more before they can select a specialty.

England has two types of licensure. There are twenty-three licensing bodies in the United

Kingdom and these are under a general medical council. Only 30 per cent of the students in the University of London finish on schedule —the other 70 per cent fall back to repeat. No student is allowed to be examined by his teacher and they have written and oral examinations. They must have a practical examination in Anatomy, Pathology and Laboratory. This year there are eight hundred American students in England and Scotland who in about three years expect to get licenses and then return and get reciprocity in America. He further stated that these students are not of the best material and the State Boards should be guarded in granting them licenses, for they have been unable to get into the American schools owing to a lack of pre-medical education.

He advocated putting the responsibility of licensing the graduates upon the Medical Schools who graduated the students. That is, they should weed out those who are unqualified before the year of graduation. Let the schools tell the Boards what they want and the Boards will give it to them. On the other hand, the Medical Boards are the means by which the medical schools will maintain their standards. For instance, the American Medical College accepted their standards for the medical schools in 1899, and Hopkins was the only school meeting their requirements. In 1903, four schools had met the requirements. The majority of the Medical Examining Boards established a minimum standard for registration which was two years of college education, accepting no candidates of less preliminary training. This caused the medical schools to raise their standards or become Class B or C schools. Since the American Medical College and State Boards are cooperating as to the standards for pre-medical education, the failures before the Boards, as you all know, are less frequent. In Virginia prior to this, 25 to 30 per cent of applicants failed—now only 5 to 6 per cent.

There is much discussion as to who should be allowed to enter the specialties of medicine. The State Boards being the only legal organization to license doctors should have some method of examining these men who propose to enter into a specialty. It is the opinion of some that the Universities could and should have some post-graduate course requiring each applicant to take a course in that specialty he desires to enter. The State Examining Boards and the Medical Schools are dependent upon each other and vie with each other in grading and qualifying men to practice the healing art. The public must be educated to know that the man who is a graduate of a Class A Medical College and passes a State Board is not yet qualified to practice a specialty until he has had special training in that line of work.

Some advocated that all reciprocity candidates be required to take a practical examination and that they be graduates of five years' standing—this being our best way to convey our duty to the public.

If possible, a uniform medical practice act of all states be adopted. Some thought the composite boards were the best. Here the standard of the osteopath, chiropractor and other cults would be raised to that of the regulars. The states having the Basic Science laws did not seem to be as popular this year as they were last. Each applicant is required to take two examinations—one in medicine and other in Basic Science. Wisconsin will accept for reciprocity applicants coming from states without the Basic Science law, though they do not admit such for publication.

Dr. William Mayo, of Rochester, Minn., read a paper entitled, "The Preliminary Education of the Clinical Specialist," but I was unfortunate in not hearing all of this paper. One of his expressions I recall "Who should be permitted to continue the practice of medicine?" His answer was, "he who attends the medical societies, clinics, post-graduate schools: who attempts to increase his knowledge so as to relieve suffering humanity. He who is morally qualified, and his higher ideals of the profession are more than to commercialize it."

Music Hath Charms

If you'll sing a song as you go along,
In the face of the real or fancied wrong;
In spite of the doubt, if you'll fight it out,
And show a heart that is brave and stout;
If you'll laugh at the jeers and refuse the tears—
You'll force the ever reluctant cheers,
And you'll win success with a little song,
If you'll sing the song as you go along.

—*Exchange.*

Presidents and Places of Meetings of the Medical Society of Virginia

As a matter of interest and record we list on this page the names of presidents and places of meeting of the Medical Society of Virginia.

Dr. James B. McCaw, Richmond, was chairman of the convention which assembled in Richmond, November 2, 1870, to organize the Medical Society of Virginia. Below is given a list of presidents, followed by names of places and years of meetings over which they presided:

President	Place of Meeting	Year of Meeting
Dr. R. S. Payne,* Lynchburg	Richmond	1871
Dr. A. M. Fauntleroy,* Staunton	Lynchburg	1872
Dr. Harvey Black,* Blacksburg	Staunton	1873
Dr. A. G. Tebault,* London Bridge	Norfolk	1874
Dr. S. C. Gleaves,* Wytheville	Abingdon	1875
Dr. F. L. Cunningham,* Richmond	Richmond	1876
Dr. Jas. L. Cabell,* University	Charlottesville	1877
Dr. J. H. Claiborne,* Petersburg	Petersburg	1878
Dr. L. S. Joynes,* Richmond	Richmond	1879
Dr. Henry Latham,* Lynchburg	Alexandria	1880
Dr. Hunter McGuire,* Richmond	Danville	1881
Dr. G. William Semple,* Hampton	Old Point Comfort	1882
Dr. W. D. Cooper,* Morrisville	Fauquier White Sulphur Springs	1883
Dr. J. E. Chancellor,* Charlottesville	Rockbridge Alum Springs	1884
Dr. S. K. Jackson,* Norfolk	Rawley Springs	1885
Dr. Rawley W. Martin,* Chatham	Alleghany Springs	1886
Dr. Bedford Brown,* Alexandria	Fredericksburg	1887
Dr. Benjamin Blackford,* Lynchburg	Richmond	1888
Dr. E. W. Rowe,* Orange C. H.	Norfolk	1889
Dr. Oscar Wiley,* Salem	Roanoke	1890
Dr. Wm. W. Parker,* Richmond	Rockbridge Alum Springs	1891
Dr. H. Gray Latham,* Lynchburg	Lynchburg	1892
Dr. Herbert M. Nash,* Norfolk	Alleghany Springs	1893
Dr. William P. McGuire,* Winchester	Charlottesville	1894
Dr. Robert J. Preston,* Abingdon	Richmond	1895
Dr. Wm. L. Robinson,* Danville	Wytheville	1896
Dr. Geo. Ben Johnston,* Richmond	Rockbridge Alum Springs	1897
Dr. Lewis E. Harvie,* Danville	Hot Springs	1898
Dr. Jacob Michaux,* Richmond	Virginia Beach	1899
Dr. Hugh T. Nelson,* Charlottesville	Richmond	1900
Dr. J. R. Gildersleeve,* Tazewell	Charlottesville	1901
Dr. R. S. Martin,* Stuart	Lynchburg	1902
Dr. John N. Upshur,* Richmond	Newport News	1903
Dr. Joseph A. Gale,* Roanoke	Roanoke	1904
Dr. Wm. S. Christian,* Urbanna	Richmond	1905
Dr. Lomax Gwathmey, Norfolk	Norfolk	1906
Dr. Paul B. Barringer, Charlottesville	Charlottesville	1907
Dr. Wm. F. Drewry, Petersburg	Chase City	1908
Dr. Stuart McGuire, Richmond	Richmond	1909
Dr. E. T. Brady,* Abingdon	Roanoke	1910
Dr. O. C. Wright,* Jarratt	Norfolk	1911
Dr. Hugh M. Taylor,* Richmond	Richmond	1912
Dr. Southgate Leigh, Norfolk	Lynchburg	1913
Dr. Stephen Harnsberger,* Catlett	Washington, D. C.	1914
Dr. Samuel Lile,* Lynchburg	Richmond	1915
Dr. Joseph A. White, Richmond	Norfolk	1916
Dr. Geo. A. Stover, South Boston	Roanoke	1917
Dr. E. G. Williams,* Richmond. Owing to influenza epidemic and the World War, meeting was not held in 1918, and Dr. Williams held over as president	Richmond	1919
Dr. Paulus A. Irving,* Farmville	Petersburg	1920
Dr. Alfred L. Gray, Richmond	Lynchburg	1921
Dr. E. C. S. Taliaferro, Norfolk	Norfolk	1922
Dr. John Staige Davis, University	Roanoke	1923
Dr. W. W. Chaffin,*† Pulaski	Staunton	1924
Dr. Hunter H. McGuire, Winchester	Richmond	1925
Dr. W. L. Harris, Norfolk	Norfolk	1926
Dr. J. Shelton Horsley, Richmond	Petersburg	1927
Dr. J. W. Preston, Roanoke	Danville	1928
Dr. J. Bolling Jones, Petersburg	Charlottesville	1929
Dr. Charles R. Grandy, Norfolk	Norfolk	1930
Dr. J. Allison Hodges, Richmond	Roanoke	1931

*Deceased.

†On account of Dr. Chaffin's illness, the first vice-president, Dr. H. H. McGuire, of Winchester, presided in 1924.

ROANOKE, VIRGINIA

Convention City for Sixty-second Annual Meeting of Medical Society of Virginia October 6, 7, and 8, 1931

Roanoke, with its marvelous growth and development, covered by so short a period of years, is frequently referred to as the "Magic City." Roanoke was not started, however, nor has it reached its present position as one of the important cities of the South by waving a magician's wand. This city did not just happen. The community has attained its present

Hotel Patrick Henry.

proportions because the site of the city is logically located, and it numbers among its citizens thousands of men and women who have had a vision of great possibilities.

The growth has been rapid and continuous, but stable. The city has a corporate population of 70,000. The population of the metropolitan district is 103,120. The city is beautifully located in a mighty amphitheatre between the Alleghany and Blue Ridge Mountains at the southern end of the historic Shenandoah Valley, and at the eastern gateway to beautiful and prosperous Southwest Virginia. The climate is pleasant and healthful all the year.

Roanoke is the medical center of Southwest Virginia and adjacent territory. Six hospitals, with 396 beds, and an efficient health department render splendid service. The Medical Arts Building is one of the most handsome office buildings in the city. Roanoke County is said to be one of the best sanitated counties in America.

Roanoke is sometimes referred to as a railroad town. It is. This is the home of the Norfolk & Western Railway Company; and the trunk line of the Virginia Railway goes this way. However, the city is now more than a railroad town.

From one end to the other may be seen and

Medical Arts Bldg., Roanoke.

heard the wheels of one hundred and forty-two industries, producing a great variety of products, and employing 18,500 persons, with an annual pay roll of $25,000,000.00

Roanoke, in looking to its future growth, has a City Planning and Zoning Commission, working along the definite lines of the Comprehensive City Plan prepared for the City by a nationally known firm of city planners. This city is an important center in the State Highway System, with through roads in all directions. The tourist visitors are many thousands annually.

Within the city proper we have Mill Mountain, elevation 2000 feet above sea level, from which one gets a panorama of the tail of the Shenandoah Valley and the undulating emerald of the monntain forests; at its base we see

Hotel Roanoke.

Roanoke City Hospital with Mill Mountain in background.

Roanoke looking like a cluster of toy houses and its blinking lights at night.

To the southwest is Mountain Lake, elevation 4500 feet, with its lake nestled in the cone of the peak, a veritable haven of tranquility. One may go to Craig Healing Springs about forty-two miles from Roanoke, or Dixie Caverns about fifteen miles away.

To the west are the Giant Caverns at Narrows, Virginia. Circling, one may go to White Sulphur Springs or Hot Springs.

Norfolk & Western R. R. New Office Bldg.

Going north, Virginians may gaze upon one of the wonders of the world, Natural Bridge and its entrancing beauty, which has been greatly enhanced by unusual night illumination. One may see the Peaks of Otter; go over the Natural Bridge trail with its scenic beauty; further north are the world famous caverns lining the Shenandoah Valley.

We could go on and on in praise about our locale; sufficient to say—Why see Europe first, when we have it all about Roanoke?

"Roanoke, the city of open hearts, where neither gates nor hearts are ever closed to those whose hearts are right; for then, no matter whence nor why nor when the visitor comes the gain is ours."

The local profession is looking forward with pleasure to the 62nd annual meeting of the Medical Society of Virginia which will be held in Roanoke. Toward making the meeting a success, a committee has been appointed, which is as follows.

General Chairman—Dr. W. L Powell
Treasurer—Dr. F. A. Farmer
Secretary—Dr. Fred Hamlin

Chairmen of Committees

Automobile—Dr. M. A. Johnson, Jr.
Commercial Exhibits—Dr. A. P. Jones
Entertainment—Dr. J. T. McKinney
Finance—Dr. H. B. Stone
Golf Tournament—Dr. R. H. DuBose
Hotels and Halls—Dr. H. H. Trout
Publicity—Dr. K. D. Graves
Reception—Dr. J. W. Preston
Scientific Exhibits—Dr. W. P. Jackson
Trap Shoot—Dr. L. G. Richards
Ladies—Mrs. J. O. Boyd

Roanoke Public Library and Elmwood Park.

Three men of national reputation will lecture Tuesday afternoon, October 6th, before the regular meeting starts, under the auspices of the Roanoke Academy of Medicine. While it is impossible to state definitely the name of one of the men, arrangements have been completed with two of them, viz., Dr. Russell L. Cecil and Dr. Chas. G. Kerley, both of New York.

It is hoped that a large number of the doctor's ladies will attend the meeting, and preparations for their entertainment have been made.

Program for the Ladies

October 7th

10:00 A. M.—Meeting of the Woman's Auxiliary, at Hotel Patrick Henry. Reports. Ad-

dress by Mrs. Walter McNabb Miller, of the American Child Health Association

1:30 P. M.—Luncheon at the Country Club, followed by bridge or golf.

10:30 P. M.—Reception for the President, Members and Guests of the Medical Society of Virginia, followed by a Grand Ball in the Patrick Henry Ball Room. Refreshments.

October 8th

10:00 A. M.—Meeting of Woman's Auxiliary. Talk by Dr. W. F. Draper, and Round Table discussions

2:00 P. M.—Trip to Natural Bridge, followed by tea at Forest Tavern. (Automobiles for this trip will be at the Patrick Henry Hotel at 1:45 P. M.)

An effort has been made to make this meeting a memorable occasion for the doctors, as well as their ladies.

Entertainments for the Men

October 6th

10:00 A. M.—Golf Tournament—Roanoke Country Club
Trap Shoot—Roanoke Gun Club.

October 7th

1:00 P. M.—Luncheon at the Elks Club.

10:30 P. M.—Reception for the President, Members and Guests of the Medical Society of Virginia, followed by a Grand Ball in Patrick Henry Hotel Ball Room. Refreshments

Hollins College.

Roanoke Country Club.

October 8th

1:00 P. M.—Trip to Catawba Sanatorium. Luncheon at Sanatorium, 2:00 P. M.

A large Reception Committee has been organized. Each incoming train will be met, and members of the Committee will be on hand at the hotels to extend a cordial welcome and to be of any service possible to the out-of-town guests and members.

Parking space for fifty cars has been secured at the Elmwood parking lot, directly opposite the Patrick Henry Hotel. A card may be obtained from the registration desk which will entitle members of the Society to the use of this space.

Any of the doctors wishing to secure an automobile for a trip, or any other purpose, may do so by telephoning the Chairman of the Automobile Committee.

As hotel space is limited, owing to the fact that both Ponce de Leon and Roanoke Hotels may still be under construction at the time of the meeting, those wishing reservations are urged to apply promptly to either the Chairman of the Hotel Committee, or the Manager of the Patrick Henry Hotel. A list of available boarding houses in the neighborhood of the Patrick Henry Hotel will be on hand at the registration desk for those unable to secure hotel accommodations.

ON TO ROANOKE (by G. M. M.)

'Mid vales and hills,
'Mid rocks and rills,
With mountain sentinels around,
Like sturdy oak
Stands Roanoke,
No fairer landscape can be found.

Come dwell a while
Where sunbeams smile,
And birds are singing in the dell,
Come hear us "blow"
Of what we know,
And see the city where we dwell

With open arms,
With many charms,
With vales with rivers running through,
She sends a call
To one and all,
And pledges all she has to you.

Be sure to make your plans to attend the Roanoke meeting of the Medical Society of Virginia, October 6, 7 and 8, 1931.

Woman's Auxiliary, to the Medical Society of Va.

PRESIDENT—*Mrs. J. Allison Hodges*, 5511 Cary Street Road, Richmond.

PRESIDENT-ELECT—*Mrs. W. N. King*, 1314 Westover Avenue, Norfolk.

SECRETARY—*Mrs. James K. Hall*, 3011 Seminary Avenue, Richmond.

TREASURER—*Mrs. Wm. Branch Porter*, 5125 Cary Street Road, Richmond.

Our Annual Meeting.

This will be our last message before the Annual Meeting of the Auxiliary in Roanoke, October 6th, 7th, and 8th. The local committee under the able leadership of the chairman, Mrs. John O. Boyd, has arranged a delightful program, and I urge that we show our appreciation of their efforts by a large attendance.

These "get-together meetings," where we meet women from all sections of the State and where we get a clearer understanding of the real work of the Auxiliary, do more to enlarge our membership and increase our interest in medical affairs than any one thing we can do at present.

Let's all pull together and have a large and enthusiastic gathering in Roanoke.

Sincerely,

MARY GRAY HODGES
(MRS. J. ALLISON HODGES),

President, Woman's Auxiliary to the Medical Society of Virginia.

PRELIMINARY PROGRAM

Wednesday, October 7th

10:00 A. M.—Meeting of the Auxiliary in the Red Room of the Patrick Henry Hotel. Reports. Address by Mrs. Walter McNabb Miller, of the American Child Health Association.

1:30 P. M.—Luncheon at the Country Club, followed by bridge or golf, the ladies designating when they register which they prefer.

10:30 P. M.—Reception for the President, Members and Guests of the Medical Society of Virginia, followed by a Ball in the Patrick Henry Hotel Ball Room.

Thursday, October 8th

10:00 A. M.—Meeting in the Red Room of the Patrick Henry Hotel. Talk by D..

W. F. Draper. Round Table Discussions.

2:00 P. M.—Trip to Natural Bridge, followed by tea at Forest Tavern. (Cars for this trip will be at the Patrick Henry Hotel at 1:45 P. M.)

Report on Organization Before the Woman's Auxiliary to the American Medical Association in Philadelphia.

The work of the Organization was most interesting, and it has been a great pleasure to serve as your Chairman.

From this report it may seem that very little has been accomplished in organizing States compared to the enormous amount of work actually covered by your Committee. I wish that this report could show you the value of real friends, new and old, who have assisted and stood by me at all times. For them I am indebted to the Auxiliary, and I shall eternally sing its praises.

According to the Constitution and By-Laws, the Organization program is carried on by the active work of the Vice-Presidents—and so the Nation was divided into four districts—each Vice-President, with her Committee of three, being responsible for from eleven to fifteen states. Each of these women has been untiring in her efforts, and I take this opportunity to express to each one my deepest gratitude for the help she has so ably given.

In January, our President, Mrs. J. Newton Hunsberger, feeling the need of more publicity, asked that each District Chairman write a report, or a "Panoramic View" of the Woman's Auxiliary to the American Medical Association, in four articles, which would be published in all State Medical Journals.

First Panoramic View

By Mrs. W. Wayne Babcock, of Pennsylvania

Eastern District: This came out early in January, and was written in order that each district should know of the progress of its own states, as well as those of the other three sections. It was also deeply appreciative of the generous courtesy of the individual State Journals for allowing space in which the Auxiliary could report its activities.

Personal contacts are necessary for County development, and success is plainly shown in the marvelous growth of Pennsylvania, at whose feet all other Auxiliaries are anxious to sit and learn.

New Hampshire and New Jersey are the only States 100 per cent organized. Every County in these States was visited during the year by the State President.

Second Panoramic View

By Mrs. James Blake, of Minnesota

North Central District: Due to her location on the map, the Second Vice-President now finds herself interested in the destinies of this group of States. Looking backward and forward, we find these States all doing something of common interest. In the January *Journal of the Indiana State Medical Society*, the Auxiliary President stresses the importance of more constructive work on the part of her organized County groups. "Physicians wives," she says, "hold an enviable position in being privileged to have a part in a world wide health program, and I would urge every physician's wife to bring before other women dependable knowledge and a just appreciation of the real spirit and purpose, and actual achievements of the medical profession."

In *Illinois* the motto might well read—"Builders we are, and builders we must ever be. Builders, not alone in stone that shelters life, but builders in life." We find good, constructive programs of well balanced educational value.

Minnesota, the North Star State, has had a busy and successful year on organization. The President and Organization Chairman have visited over the State and planned meetings and educational programs with many County groups. The result of this is ten new Auxiliaries, twenty counties with 1,024 members.

Third Panoramic View

By Mrs. C. W. Garrison, of Arkansas

Southern District: The Auxiliaries in the South may not be moving as rapidly as in other sections, but the quality of those existing has proved them to be of the greatest value in promoting the aims of the National body.

Fourth Panoramic View

By Mrs. James Percy, of California

Western District: In a better-late-than-never manner, this article has just been sent in. This shows that the women of the West are now aroused to the possibilities and use-

fulness of an Auxiliary, and experienced women are stepping forward, willing to serve and assist in making an active, worthwhile organization. Growth in numbers has not been sought so much as growth in achievements. *California* really expected to report 1,000 members instead of 883.

These published articles were well received, and we have had a number of letters from the Editors of the State Medical Journals expressing pleasure for the work reported. Now-a-days it is with a real thrill that we open a Medical Journal and see that the aiding hand of the Auxiliary has been asked by some medical President; that we see frequent references to the excellent work the Auxiliary is doing, and know that the Auxiliary is furthering the aims and objects of organized medicine.

In order to have an efficient survey made—to bring you a definite report—a State map containing a questionnaire was sent by the Committee to each State President. With the exception of a few from States where there was very little interest, these were all filled out and returned with the following report:

EASTERN DISTRICT: Fifteen States and District of Columbia.

NEW HAMPSHIRE: Organized 100%. Members, 160.

NEW JERSEY: Organized 100%. Members, 654.

PENNSYLVANIA: Organized counties, 34. Members, 1,980.

KENTUCKY: Organized counties, 30. Members, 320.

VIRGINIA: Organized counties, 6. Members, 220.

WEST VIRGINIA: Organized counties, 9. Members, 298.

DELAWARE: State organization only. Members, 76.

DISTRICT OF COLUMBIA: City organization only. Members, 225.

OHIO: Has two counties organized, 5 more ready—60 members—without State organization.

MARYLAND: The question of an Auxiliary was presented at the April meeting of the Council. Report was "No progress or enthusiasm for a Woman's Organization."

NEW YORK: Has voted for an organization, but the Committee appointed to consider an Auxiliary is not yet favorable. May again come before the House of Delegates in June, 1931.

MASSACHUSETTS: Passed House of Delegates, but has had little support. A leader not found to organize the State.

MAINE: Voted for an Auxiliary without having progressed.

RHODE ISLAND: Hopeful of organizing very soon.

CONNECTICUTT: Approved by House of Delegates without organized effort.

VERMONT: Reported interest of individuals.

WESTERN DISTRICT: Eleven States.

OREGON: Organized counties, 3. Members, 138.
NEBRASKA: Organized counties, 10. Members, 247.
COLORADO: Organized counties, 8. Members, 268.
CALIFORNIA: Organized counties, 11. Members, 883.
ARIZONA: Organized counties, 1. Members, 36.
WYOMING: Organized State. Members, 38.
NEW MEXICO: Members, 17.
IDAHO: Members, 26.
NEVADA: No report.
UTAH: Letter from State President without report.
WASHINGTON: Hopeful; quite sure of organization at State meeting in July.

SOUTHERN DISTRICT: Eleven States.

ALABAMA: Organized counties, 6. Members, 119.
ARKANSAS: Organized counties, 13. Members, 278.
NORTH CAROLINA: Organized counties, 26. Members, 307.
SOUTH CAROLINA: Organized counties, 13. Members, 195.
GEORGIA: Organized counties, 35. Members, 419.
LOUISIANA: Organized counties, 5. Members, 400.
MISSISSIPPI: Organized counties, 10. Members, 134.
OKLAHOMA: Organized counties, 3. Members, 106.
TENNESSEE: Organized counties, 3. Members, 176.
TEXAS: Organized counties, 34. Members, 1,229.
FLORIDA: Organized counties, 12. Members, 215.

NORTH CENTRAL DISTRICT: Eleven States.

ILLINOIS: Organized counties, 18. Members, 550.
INDIANA: Organized counties, 7. Members, 325.
IOWA: Organized counties, 10. Members, 208.
KANSAS: Organized counties, 3. Members, 95.
MICHIGAN: Organized counties, 9. Members, 392.
MINNESOTA: Organized counties, 54. Members, 937.
MISSOURI: Organized counties, 25. Members, 607.
MONTANA: No organization.
NORTH DAKOTA: Just organized, June 2nd and 3rd.
SOUTH DAKOTA: Paid membership, 65.
WISCONSIN: Organized counties, 9.

In the quest for better organization, your Committee has been in close communication with the "little interest" and unorganized States. On the whole, and in spite of a lean year, we feel that the Auxiliary is growing rapidly.

The membership stands at 12,494 with several States unreported.

We recommend not to organize a new State unless it appears reasonably certain that there is interest enough among the doctors who want the Auxiliary.

I should like to say again that I appreciate the honor of being chosen your First Vice-President. It has been a privilege to serve as your Chairman.

Respectfully submitted,

ALICE LEIGH

(MRS. SOUTHGATE LEIGH),

Chairman of Organization, Woman's Auxiliary to A. M. A.

PRELIMINARY PROGRAM

MEDICAL SOCIETY OF VIRGINIA

Sixty-second Annual Session Roanoke

OCTOBER 6, 7 and 8, 1931

Headquarters: PATRICK HENRY HOTEL

SCIENTIFIC PROGRAM

Tuesday, October 6, 1931
8:00 P. M.
Ball Room, Patrick Henry Hotel
Open to Profession and Public

Call to order—W. L. Powell, M. D., Chairman Committee of Arrangements.
Invocation—Rev. H Spencer Edmunds, D. D.
Announcements.
Address of Welcome—Hon. C. A. Woodrum.
Memorial Hour (audience standing)—Joseph A. White, M. D., Richmond.
Address of President—Brief Comments on Some Medical Topics of Current Interest to the State Medical Profession—J. Allison Hodges, M. D., Richmond.
Address—The Classification and Treatment of Chronic Arthritis (*lantern slides*)—Russell L. Cecil, M. D. (*invited guest*), New York, N Y.
Arthritis Treated as a Form of Bacterial Allergy—Warren T. Vaughan, M. D., Richmond.
Discussion opened by J. Blair Fitts, M. D., Richmond.
Problems in the Relationship of Streptococci and Diphtheroid Bacilli to Chronic Infectious Arthritis—Aubrey H. Straus, Richmond.
Discussion opened by O. O. Ashworth, M. D., Richmond.
Is the Family Physician Any Longer a Necessity?—J. H. Hiden, M. D., Pungoteague.
The Old Family Physician Fast Coming Back Into His Own, As In Former Days—B. C. Keister, M. D., Washington, D. C.
Discussion opened by L. G. Pedigo, M. D., Roanoke.

Wednesday, October 7, 8:45 A. M.

Ward Walk, with Discussion of Some Clinical Problems—M. J. Payne, M. D., Staunton.
The Treatment of Fractures by Local Anesthesia and Skeleton Traction (*lantern slides*)—James T. Tucker, M. D., Richmond.
Discussion opened by H. Page Mauck, M. D., Richmond.
Advantages of the Plaster Traction Splint (*lantern slides*)—J B. Dalton, M. D., Richmond.
Discussion opened by James T. Tucker, M. D., Richmond.
Abdominal Drainage—Southgate Leigh, M. D., Norfolk.

10:00 A. M.

Special Order—Symposium on Mental Hygiene

(a) The Mental Hygiene Movement—Ralph C. P. Truitt, M. D. (*invited guest*), Baltimore, Md.
(b) A Survey of Mental Disease in Virginia—D. C. Wilson, M. D., University.
(c) Present Activities for the Prevention of Mental Disorders in Virginia—William F. Drewry, M. D., Richmond.
(d) A Suggested Program of Mental Hygiene for Virginia—Beverley R. Tucker, M. D., Richmond.

Discussion:
In Relation to General Medicine—I. C Harrison, M. D., Danville.
In Relation to Surgery—R. L. Payne, M. D., Norfolk.
In Relation to Pediatrics—L. T. Royster, M. D., University.

Voluntary Papers

Epidemic Encephalitis—John R. Gill, M. D., Petersburg.
Discussion opened by D. C. Wilson, M. D., University.
How Far Will a Malingerer Go?—E. P. Tompkins, M. D., Lexington.
Insufficient Treatment in Early Syphilis Predisposes to Central Nervous System Syphilis—D. C. Smith, M. D., and R. E. Glendy, M. D., University.
Discussion opened by R. D. Kimbrough, M. D., Norfolk.
The Relation of Infection During Early Life to Subsequent Mental Disorders—Buckner M. Randolph, M. D., Charlottesville.
Eugenic Control and Its Relationship to the Science of Life and Reproduction—J. H. Bell, M. D., Colony.
Diagnosis and Surgical Treatment of Meniere's Syndrome (*lantern slides*)—C. C. Coleman, M. D., Richmond.
Some Considerations of Spontaneous Subarachnoid Hemorrhage, with Report of Four Cases (*lantern slides*)—Staige D. Blackford, M. D., University.
Birth Control—W. M. Bowman, M. D, Petersburg.
Discussion opened by W. B. McIlwaine, M. D., Petersburg.
Leptothrix Buccalis Infection—T. Latane Driscoll, M. D, Richmond.

1:00 P. M.—Luncheon at Elks Club

Wednesday, 3:00 P. M.

The Practical Application of the Modified Ascheim-Zondek Test for Pregnancy: Demonstration with Test Animals—William K. Lloyd, M. D., Christiansburg.
Discussion opened by A. M. Groseclose, M. D., Roanoke.
Value of the Hormone Test for Early Pregnancy—Walter B. Martin, M. D., Norfolk.
Trichomonas Vaginitis—C. J. Andrews, M. D., Norfolk.
Discussion opened by Stuart Michaux, M. D., Richmond.
The Teaching of Prenatal and Postnatal Care—Greer Baughman, M. D., Richmond.
Discussion opened by C. J. Andrews, M. D., Norfolk.

The Significance of the Schilling Differential Blood Count in Acute Infections of Childhood: A Brief Resumé—W. Ambrose McGee, M. D., Richmond.
Discussion opened by Douglas G. Chapman, M. D., Richmond.
The Etiology and Treatment of Enuresis—John S. Weitzel, M. D., Richmond.
Discussion opened by F. D. Wilson, M. D., Norfolk.
The Relation of Pneumonia to Vitamins—St. Geo. T. Grinnan, M. D., Richmond.
Discussion opened by Henry Stern, M. D., Richmond.
Diabetes in Children and Young Adults—H. B. Mulholland, M. D., University.
Diabetic Coma: A Report of Twenty-two Cases—D. C Ashton, M. D., Richmond.
Trichiniasis: Report of Five Cases in One Family—Oscar Swineford, Jr., M. D., and W. W. Waddell, Jr., M. D., University.

Wednesday, 8:00 P. M.

Reports from Special Committees.
Interrelationships of Preventive and Curative Medicine—Warren F. Draper, M. D., State Health Commissioner, Richmond.
Pericardial Adhesions (*lantern slides*)—Hugh H. Trout, M. D., Roanoke.
Discussion opened by E. P. Lehman, M. D., University.
Repair of Bilateral Harelip (*lantern slides*)—J. G. Lyerly, M. D., Richmond.
Radio-Therapy of Non-Malignant Conditions—Claude Moore, M D., Washington, D. C.
Don'ts in Dermatology—J. Beverly DeShazo, M. D., Ridgeway.

10:30 P. M.—Reception for Presideent, Members and Guests of the Society, followed by a Grand Ball in the Patrick Henry Hotel Ball Room. Refreshments.

Thursday, October 8, 1931, 8:45 P. M.

Iodine Fast Hyperthyroidism: A Problem in the Treatment of Goitre—Linwood D. Keyser, M. D., Roanoke.
Discussion opened by J. Shelton Horsley, M. D., Richmond.
Report of a Case of Cardiac Failure with Low Basal Metabolism and Hypertension—Kinloch Nelson, M D, Richmond.
Physical Factors in Coronary Occlusion—J. Morrison Hutcheson, M. D., Richmond.
Angina Pectoris Assocated wth Pernicious Anemia—William B. Porter, M. D., Richmond.
Discussion opened by F. C. Rinker, M. D., Norfolk.
The Difficulties Encountered in the Etiological Diagnosis of Arotic Regurgitation (*lantern slides*)—Andrew D. Hart, M D., and J. Edwin Wood, Jr., M. D, University.
Why Always Appendectomy?—M. B. Hiden, M. D., Warrenton.
Report of Nine Hundred Consecutive Abdominal Operations—Geo. H. Reese, M. D., Petersburg.
Discussion opened by J. E. Rawls, M. D., Suffolk.
Subphrenic Abscess as a Post-Operative Complication in Abdominal Surgery (*lantern slides*)—J. Warren Sayre, M. D., Newport News.
Discussion opened by A. P. Jones, M. D., Roanoke.
Trauma of the Abdomen—Frank S. Johns, M. D., Richmond.
Discussion opened by M. A. Johnson, M. D., Roanoke.
The Treatment of Postoperative Intestinal Obstruction—Charles R. Robins, M. D., Richmond.
Discussion opened by I. A. Bigger, M. D., Richmond.
Vaginal Hysterectomy for Cancer of the Body of the Uterus—J. Shelton Horsley, M. D., Richmond
Discussion opened by W. R. Whitman, M. D., Roanoke.
A Consideration of Uterine Fibromyoma and Other Causes of Non-Malignant Uterine Bleeding—Robert L. Payne, M. D., Norfolk.
Discussion opened by W. H. Goodwin, M. D., Universty.
Cancer of the Cervix: Observations Drawn from the Study of One Hundred Cases Treated with Radium—W. Lowndes Peple, M. D., Richmond.
Traumatic Industrial Surgery—E. T. Trice, M. D., Richmond.
Discussion opened by H. U. Stephenson, M. D., Richmond.
The X-Ray in Emergency Surgery (*lantern slides*)—M. H. Todd, M. D., Norfolk.
Discussion opened by E. C. S. Taliaferro, M. D., Norfolk.

1:00 P. M.—Trip to Catawba Sanatorium. Luncheon at Sanatorium at 2:00 P. M.

Thursday, 3:00 P. M.
Catawba Sanatorium

Discipline in the Treatment of Tuberculosis—J. E. K. Flannagan, M. D., Salem.
Discusson opened by Frank B. Stafford, M. D., Sanatorium.
The Physical and X-Ray Examination of the Tuberculous Chest (*lantern slides*)—J. B. Nicholls, M. D., and L. R. Broome, M. D., Catawba Sanatorium.
Discussion opened by W. E. Brown, M. D., Sanatorium.
Difficulties in the Diagnosis of Atypical Cases of Pulmonary Tuberculosis (*lantern slides*)—Frank B. Stafford, M. D., Sanatorium.
Discussion opened by Dean B. Cole, M. D., Richmond.
Early Diagnosis of Tuberculosis in Children and Young Adults (*lantern slides*)—Charles W. Scott, M. D., Richmond.
Discussion opened by C. L. Harrell, M. D., Norfolk.
Hunger Pain Without Peptic Ulcer—Wm. H. Higgins, M. D., Richmond
Discussion opened by Blanton P. Seward, M. D., Roanoke.
Gastric and Duodenal Secretion: Comparison of Stimuli—Robert S. Preston, M. D., Richmond.
Discussion opened by J. Morrison Hutcheson, M. D., Richmond.
Gastric Cancer—M. O. Burke, M. D., Richmond.
Discussion opened by Carrington Williams, M. D., Richmond.
Chronic Gonorrhea as a Clinical Entity—C. B. Pritchett, M. D., Hopewell.
Discussion opened by A. I. Dodson, M. D., Richmond.
Transplantation of the Ureters in Exstrophy of the Bladder—A. I. Dodson, M. D., Richmond.

Special Order—Report from the House of Delegates

Induction of New President.
Adjournment.

All papers and contributions are the property of the Society and should be given the Reporter immediately after presentation, for publication in THE MONTHLY.

ANNOUNCEMENTS
REGISTRATION AND INFORMATION BUREAU
Patrick Henry Hotel

Dues may be paid at Registrar's desk. Please advise Registrar of any change of address.

GENERAL AND SCIENTIFIC SESSIONS
Patrick Henry Hotel

BUSINESS SESSIONS
Executive Council—Patrick Henry Hotel, Room 236, Tuesday, October 6, at 12 M.

House of Delegates—Patrick Henry Hotel, Breakfast Room, Tuesday, October 6, at 2:30 P. M., and Wednesday, October 7th, at 2:30 P. M.

CLINICS
Tuesday, October 6
2:00 to 5:00 P. M.
Medical—Russell L. Cecil, M. D., New York.
Pediatric—Charles G. Kerley, M. D., New York.
Obstetric—To be announced.

SCIENTIFIC AND COMMERCIAL EXHIBITS
Patrick Henry Hotel

WOMAN'S AUXILIARY
Red Room, Patrick Henry Hotel

ENTERTAINMENTS
Tuesday, October 6, 10:00 A. M.—Golf Tournament—Roanoke Country Club.
Trap Shoot—Roanoke Gun Club.
Wednesday, October 7, 1:00 P. M.—Luncheon at the Elks Club.
10:30 P. M.—Reception for the President, Members and Guests of the Medical Society of Virginia, followed by a Grand Ball in Patrick Henry Hotel Ball Room. Refreshments.
Thursday, October 8, 1:00 P. M.—Trip to Catawba Sanatorium. Luncheon at Sanatorium, 2:00 P. M.

The Truth About Medicine

In addition to the articles enumerated in our letter of June 26th, the following have been accepted:
Abbott Laboratories
Capsules Pentobarbital Sodium—Abbott, 1½ grains.
Ely Lilly & Co.
Pulvules Pentobarbital Sodium—Lilly, 1½ grains.
Elixir No. 229, Ephedrine Sulphate, 2 grains.
Parke, Davis & Co.
Ventriculin, 100 Gm. Bottle
Sandoz Chemical Works, Inc.
Sandoptal
Tablets Sandoptal, 0.2 Gm.
Nonproprietary Articles
Pentobarbital Sodium.

NEW AND NON-OFFICIAL REMEDIES
The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association, for inclusion in New and Non-official Remedies:

Alpha Naphthol Camphor Oil (Carel).—It contains alpha-naphthol (New and Non-official Remedies, 1931, p. 292), 0.5 Gm.; camphor, 0.5 Gm.; cottonseed oil, 12 Gm.; liquid petrolatum to make 100 Gm. Carel Laboratories, Redondo, Calif.

Alpha-Naphco Camphor Nasal Unguent.—It contains alpha-naphco (New and Non-official Remedies, 1931, p. 293), 2 Gm.; camphor, 2 Gm.; petrolatum to make 100 Gm. Carel Laboratories, Redondo, Calif.

Alpha-Naphco Cones.—Each cone weighs 2.65 Gm. and contains alpha-naphco (New and Non-official Remedies, 1931, p. 293), 0.32 Gm., in a base composed of boric acid and sodium bicarbonate, equal parts. Carel Laboratories, Redono, Calif.

Alpha-Naphco Menthol Suppositories.—Each suppository weighs 5.2 Gm. and contains alpha-naphco (New and Non-official Remedies, 1931, p. 293), 0.356 Gm., and menthol, 0.014 Gm., in a base composed of oil of theobroma and yellow wax. Carel Laboratories, Redondo, Calif.

Alpha-Naphco Rectal Suppositories.—Each suppository weighs 2 Gm and contains alpha-naphco (New and Non-official Remedies, 1931, p. 293), 0.1376 Gm. in a base composed of oil of theobroma and yellow wax. Carel Laboratories, Redondo, Calif.

Alpha-Naphco Zinc Stearate Camphor Ointment.—It contains alpha-naphco (New and Non-official Remedies, 1931, p. 293), 7.5 Gm.; camphor 1.5 Gm.; zinc stearate, 10 Gm.; starch 10 Gm., petrolatum to make 100 Gm. Carel Laboratories, Redondo, Calif.

Alpha-Naphco Zinc Stearate Powder.—It contains alpha-naphco (New and Non-official Remedies, 1931, p. 293), 3.65 Gm.; zinc stearate, 8.75 Gm., talcum to make 100 Gm. Carel Laboratories, Redondo, Calif. (Jour. A. M. A., July 11, 1931, p. 103).

Liver Extract.—Lederle.—A concentrated, water soluble, nitrogenous, nonprotein fraction obtained from fresh mammalian liver. It is supplied in vials containing an amount of powdered extract representing approximately 100 Gm. of fresh, whole liver. The product is proposed for use in the treatment of pernicious anemia and tropical sprue. Lederle Laboratories, Inc., Pearl River, N. Y.

Rabies Vaccine (Hixson).—An antirabic vaccine (New and Non-official Remedies, 1931, p. 358), prepared according to the general method of David Semple (phenol killed). The product is marketed in packages of seven vials, in packages of fourteen vials and in packages of fourteen syringes. (Jour. A. M. A., July 18, 1931, p. 179).

Foods
The following has been accepted by the Committee on Foods of the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in Accepted Foods:

SMACO (203) Concentrated Liquid Whole Milk (Sterilized) (S. M. A. Corporation, Cleveland).—A canned evaporated milk. The product is produced exclusively for infant feeding. It is claimed to keep indefinitely in the unopened can.

Propaganda for Reform
The Federal Food and Drugs Act: 1906-1931.—A quarter of a century ago, on June 30, 1906, President Theodore Roosevelt signed the Food and Drugs Act specifically designated "for preventing the manufacture, sale, or transportation of adulterated or misbranded or deleterious foods, drugs, medicines and liquors and for regulating traffic therein, and for other purposes." This measure has had a wholesome effect that can scarcely be realized by those not familiar with the conditions of the past. The American Medical Association, through the Council on Pharmacy and Chemistry, has been a pioneer in its efforts to protect the medical profession and the public against fraud, undesirable secrecy and objectionable advertising in connection with proprietary medicinal articles. Its efforts have been greatly facilitated by the passage and enforcement of the

Food and Drugs Act. The coming of age of the Food and Drugs Act should not be allowed to pass without some reference to the dominant figure in the crusade for pure foods and drugs, the late Dr. Harvey Washington Wiley. He was chief chemist of the U. S. Department of Agriculture during the period of the fight for the Federal act, and until 1912, "a very mountain among men, a lion among fighters." The movement that he helped to start deserves unqualified commendation. The forces on the fighting line deserve congratulation. There is still much to be accomplished. Vigilance must never be relaxed. (Jour. A. M. A., July 4, 1931, p. 32).

Therapeutic Possibilities of Gastric Mucin.—The gastric mucus aids in protecting the cells from digestive or "erosive" damage by the acid that is poured into the lumen of the stomach when the gastric glands are active. Undue secretion of mucus in the stomach is responsible for lowering of the gastric acidity, just as proteins tend to "bind" free hydrochloric acid. The actual capacity of mucus to produce such an effect has been verified. Mucin prepared from hogs' stomachs was more potent than equivalent amounts of common protein foods such as gelatin, meat and egg white. In a few human patients with definite historics of ulcer and roentgenographic evidence of peptic ulcer the addition of powdered mucin to the ordinary bland diet brought about relief from subjective symptoms. (Jour. A. M. A., February 28, 1931, p. 693).

Avertin.—The Council on Pharmacy and Chemistry reports that Avertin was submitted for consideration in February of this year; that it recognizes the fact that the product presents certain desirable properties but that definite action concerning its recognition is postponed pending investigation of certain of its side actions now being conducted. For the information of the medical profession the Council submits a report concerning the present status of the drug. Avertin is tribrom-ethanol. It was introduced in Germany in 1926, to be used alone for rectal anesthesia, or to be supplemented by other narcotics, including morphine and ether. Later Avertin was offered in a solution, 1 c.c. of which contains 1 Gm. of Avertin dissolved in amylene hydrate (tertiary amyl alcohol). This solution has been the subject of several hundred reports. After reviewing the reported advantages and disadvantages the Council concludes: though the present evidence indicates that Avertin may prove valuable as a means of initiating narcosis but not for complete narcosis, the Council decided not to admit the drug to New and Non-official Remedies. (Jour. A. M. A., November 8, 1930, p. 1427).

Book Announcements

Milk Allergy. A Brief Resumé of Current Literature on Milk Allergy with a Description of SMACO Non-Allergic Milks and Suggestions for Their Use. Booklet No. 300. From the Research Division, S. M. A. Corporation, Cleveland, Ohio. Pamphlet of 24 pages.

This booklet is offered free of charge to physicians who will write the S. M. A. Corporation at Cleveland, Ohio, asking for it. SMA and SMACO products are not advertised to the public and carry on the label the statement that they are to be used only under the direction of a licensed physician.

Modern Proctology. By MARION C. PRUITT, M. D., L. R. C. P., S. (Ed.), F. R. C. S. (Ed.), F. A. C. S., Atlanta, Georgia. Associate in Surgery, Emory University School of Medicine; Assistant Visiting Surgeon, Grady Hospital; Proctologist, Crawford W. Long Memorial Hospital and Clinic, Georgia Baptist Hospital, and Anti-Tuberculosis Association, etc. St. Louis. The C. V. Mosby Company. 1931. Octavo of 404 pages. With 233 Illustrations. Cloth. Price, $8.00.

Bedside Interpretations of Laboratory Findings. By MICHAEL G. WOHL, M. D., Associate Professor of Experimental Medicine, Temple University Medical School; Chief of Metabolic Clinic, Temple University Hospital and Chief of the First Medical Diagnostic Clinic, Mt. Sinai Hospital, Philadelphia. With an Introduction by JOSEPH McFARLAND, Sc. D., Professor of Pathology, University of Pennsylvania. St. Louis. The C. V. Mosby Company. 1931. Octavo of 320 pages. Illustrated. Cloth. Price, $6.00.

Cutaneous X-Ray and Radium Therapy. By HENRY H. HAZEN, A. M., M. D., Professor of Dermatology, Medical Department of Georgetown University; Professor of Dermatology, Medical Department of Howard University, etc. St. Louis. The C. V. Mosby Company. 1931. Octavo of 166 pages. Illustrated. Cloth. Price, $3.00.

Medical Jurisprudence. By CARL SCHEFFEL, Ph. B., M. D., LL. B. Philadelphia. P. Blakiston's Son and Company, Inc. 1931. Octavo of 313 pages. Cloth. Price, $2.50 net.

The Child From One to Six. His Care and Training. United States Department of Labor. W. N. Doak, Secretary. Children's Bureau. Grace Abbott, Chief. Bureau Publication No. 30. Revised January, 1931. United States Government Printing Office. Washington. 1931. Octavo of 150 pages. Illustrated. Paper. For sale by the superintendent of Documents, Washington, D. C. Price, 10 cents.

Survey and Report on the Work of Blindness Prevention in India. For the Year 1930. The All-India Blind Relief Association (The Green Star Society). Town Hall, Bombay, India. Pamphlet of 73 pages. Illustrated.

The Occupational Incidence of Cancer. A paper by FREDERICK L. HOFFMAN, LL. D., Consulting Statistician, The Prudential Insurance Company of America. Contributed to the International Occupational Disease Conference. Geneva, Switzerland. Pamphlet of 23 pages.

Problems In Medical Service. By WILLIAM H. ROSS, M. D., Ex-president, Medical Society of the State of New York. Pamphlet of 87 pages, consisting of 21 addresses. Harry Lee Publishing Co,. Inc. Riverhead, N. Y.

Proceedings of the Annual Congress on Medical Education, Medical Licensure and Hospitals. Chicago, February 16, 17 and 18, 1931. American Medical Association. Chicago, Ill. Pamphlet of 131 pages.

United Fruit Company. Medical Department. Nineteenth Annual Report. 1930. Made in United States of America. Octavo of 276 pages with Illustrations. Paper.

Virginia Medical Monthly

FOUNDED BY LANDON B. EDWARDS, M. D., APRIL, 1874
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All correspondence regarding editorial matters, articles, advertisements, subscription rates, etc., should be addressed to the Monthly, 104½ West Grace Street, Richmond, Va.
All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.
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VOLUME 58 AUGUST, 1931 NUMBER 5

Editorial

Pediatrics and the Physician.

The family physician or general practitioner, in the city, small town or rural section, may well call to mind the requirements of the infant and the young and growing child. Much that is done for the apparently well infant and child is done at the suggestion of the physician. From him must come the advice that the child should receive a periodic physical examination, that the child should be subjected to certain vaccinations and other prophylactic procedures. The family doctor at this season of the year should take the initiative and, in connection with public efforts of the board of health, should advocate a careful inspection and physical survey of the child before a return to school-contacts and crowding. An interesting and significant statement has been made recently that, following a questionnaire on the point involved, 55 per cent of families are favorable to health examinations in young infants and only 9 per cent favor them in children of school age. Of course, this is probably due to the sentimental appeal of the infant and to the more successful control of the subject. As against the objection of the young child and the difficulties involved, it becomes a matter of education of the parent by the public health agents and the physician in the home.

The physician in the home must feel the urge himself through the influence of a freshened interest in the subject of health examination and in the equipment of the special knowledge involved in child life. Pediatric specialists, of course, need no such prodding but the general or family physician, whose duties cover a wide field and deal with what may be said to be more serious problems of practice, may need special study in order to arouse an interest in problems and procedures of pediatrics. The ability to make such examinations can only be acquired by such efforts. Skill and efficiency begin to become more and more easily attained by practical application in daily practice.

One of the prerequisites to acquiring knowledge in this field or even to arousing interest in the mind of the practitioner, is a review in a general way of the literature of this field; not the complex or difficult or debatable problems, but the elementary, simple and fundamental side of childhood problems in health. One should review facts concerning the new born, physical and mental growth of infants and child characteristics of puberty and adolescence; measurements of growth as found in height and weight; certain hereditary tendencies of body and posture; and the effect of normal and abnormal endocrine glands. One should inform oneself on the general subject of nutritional requirements of infants and children—as digestive and metabolism and nutritional problems of various sorts are to

be met and solved. Breast feeding, cow's milk and other foods, vitamins and mineral qualities of food in infancy and childhood, should be known by the practitioner. Here he meets and, in health examinations, is called upon to recognize such deficiency diseases as scurvy and rickets, allergic phenomena and various skin symptoms and diseases. He should understand the nature of malnutrition in infancy and childhood and recognize signs of acidosis and alkalosis. The family doctor should know the general facts concerning contagious diseases—their preventive measures through vaccination and the manner and ways of transmission; scarlet fever, its prevention and immunization, its dangers and its complications; measles, diphtheria, mumps, smallpox, and epidemic meningitis. The proper tests for susceptibility and the prevention by immunization of this type of diseases of childhood should be reviewed.

The mouth and nose examination is of prime importance. Although more or less difficult because of the lack of cooperation, and more often, because of opposition and resistance of the unwilling child patient, it should not be omitted. In this field the physician should qualify himself with certain elementary knowledge, for tonsil, adenoid, ear, teeth, and nose infections and pathology may be the great handicap, the cause of malnutrition and undergrowth, and the cause of possible respiratory and systemic infections of childhood. The chest examination is not so difficult to make but requires special knowledge to detect incipient tuberculosis, etc., and also requires special understanding of the heart as to whether or not it is normal or abnormal. The examination for deformities of the trunk and extremities, and for deformities of muscular or bone development should be done on the stripped child. The examination of the abdomen for possible disease or pathology of the appendix, gall-bladder, spleen, liver, as well as the examination of generative organs is important to the practitioner in considering the infant and child. Besides, environmental and hygienic factors that surround the child should be inquired into and, in order to inform one's self in regard to the most approved status of this phase of child-life, it is well for the practitioner to review some well considered monograph on the question.

REFERENCE

Pediatric Education: Report of the Sub-Committee on Medical Education at the White House Conference, by B. S. Veeder.

Vaccination and Immunization and Schick Test.

The two preventive measures—vaccination and immunization—have become generally adopted by pediatricians as accepted measures that should be carried out in childhood. The ravages of the preventable diseases of childhood of more than thirty years ago as compared to the incidence and mortality of these diseases at this time stand out as sufficient proof of the justification for the use of these two specific preventive measures. Both of these procedures should be adopted by the family doctor and the administration advocated in the home.

In a recent questionnaire, it was found that 98 per cent of pediatricians advised vaccination and only 2 per cent followed the practice of allowing the parent to suggest it before giving it. Only 55 per cent, however, states the report herein quoted, urge it for infants under one year. Likewise, immunization by toxin-antitoxin against diphtheria is favorably urged by pediatricians, for 91 per cent urged it while only 7 per cent gave it only when parents requested it, and a half of 1 per cent do not believe in it.

The Schick test has not yet attained the same degree of success in application. This report shows that 2 per cent give it to determine sensitivity of infants under one year and 30 per cent do not give it at all. The questionnaire states that only 62 per cent especially urge it. The value and general adoption of this test awaits time and experience.

Postgraduate Instruction in Childhood Problems of Health and Disease.

There has been properly a recent survey of present undergraduate instruction of pediatrics in the medical schools of America. It was found that while some schools appear to be giving this important branch of medicine a proportionately proper place in the student's education, there was in some quarters inadequate instruction and clinical teaching of the subject, in the light of present day knowledge and requirements. No doubt, efforts will be continued to bring this branch of medicine, the country over, to its proper place in the education of the medical student. But, of

course, the same problem remains, that there is so much accumulated knowledge and so little time in four brief years to give to all medical branches such time as the value of each subject seems to require. The same rule applies in other lines of special knowledge—the school teaching can be given only on the fundamentals and a limited amount in technical details of the science and clinical practice. One, who would devote himself exclusively to the practice of pediatrics, should give added years after graduation in general medicine to the study of the complex and intricate problems of this ever expanding science. But, happily, not all the problems of the child, in fact, not a large proportion of the problems of child growth and child disease, are beyond the depth of the knowledge of the well trained, thoughtful, studious, general practitioner.

So it is well for the already practicing physician in the home, the country over, to take up postgraduate instruction in pediatrics by a course of reading in modern textbooks by accepted authorities on the subject, by visitation to various medical schools and hospital clinics where intensive courses in modern pediatrics are given, and by attendance upon group assemblies for the study of pediatrics, fostered by medical societies and Public Health Commissions. All of these methods of postgraduate study have advantages and disadvantages. After all, intensive reading and attendance upon clinics furnishes the work-a-day physician of ten to thirty years of practice the best means for renewing his knowledge and gaining efficiency in newer methods and procedures in childhood diseases and problems.

President's Message

The Roanoke Meeting, October 6th—8th.

Another annual meeting of the State Society is near at hand, and a most cordial invitation is extended to every member to attend the sessions to be held at Roanoke on all three days, October 6th, 7th, and 8th. The different functions of the Society are social, scientific and business, but the main feature evident in all these is the educational advantages that are to be derived from social contacts and scientific discussions. It is a trite expression to say that it is the duty of members to attend, but it is a truer one to emphasize the fact that non-attendance often means a lost opportunity to keep in contact with modern medical advances. Such sources of information as these annual meetings afford should not be casually nor safely "passed up" for new tools and good tools are necessary for good work. This probably explains why the busiest doctors are always present at these meetings for they seek the latest and the best for themselves and their patients.

Several weeks ago, a young physician, who was intending to come to Virginia to practice, wrote to ask if there was any necessity for joining the State Society, and what advantages, if any, accrued because of such membership. Such an inquiry was, of course, startling but not so flippant as it might appear, for his apparent ignorance might justly have been due to the inefficiency of the Society in the State from which he came. We are pleased to know that no such reflection can be made upon our Society and its work, and that its best guarantee for the future is that its roll call embraces nearly every practitioner in the State. In other words, it is the working unit of organized medicine in the State, and with its component society units, is representative in thought and action in all medical matters in Virginia. Such an association of physicians, then, with such power and influence, demands of every member his personal attendance and cooperation, and it is earnestly hoped that at this meeting there will be a large and enthusiastic attendance.

Subjects of great scientific interest will be discussed and matters of vital business importance to the profession as well as to the State will be presented for decisive action. Every member, be he young or old, should make an earnest effort to be present, for, as a rule, the attendance is not always truly representative of every section of the State.

Every county society must be represented at least by its delegates for two matters of the gravest importance to each county in Virginia will be acted upon at this meeting.

Likewise, more individual and general discussion of the scientific papers is desired. Read carefully the full program and be prepared to discuss individually some one or more papers that will be submitted.

Personal experiences more than anything else add to the value of scientific discovery and progress in medicine and, in these meetings, the teacher often becomes the scholar.

On Wednesday night, an unusual feature will be introduced in the formal presentation of Virginia's new Health Commissioner and the presentation of the work of some of the Special Committees that are of state-wide interest and importance; all County and State Health officers that are members are urged especially to attend this session.

Remember the scheduled dates and come yourself and render a better service still by bringing a new member with you.

J. Allison Hodges, M. D., *President, Medical Society of Virginia.*

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

Infant Welfare.

There has been no forward step in medicine in Virginia for many years equal to the postgraduate clinical education sponsored by the Medical Society of Virginia.

It is not practical for very many busy doctors to go to the teaching centers for postgraduate work. It is not the privilege of many to go to the meeting of the State Society. The postgraduate department now takes a part of the Society to the doctor and offers instruction in a condensed form so that much information which is constantly useful in daily practice is available to every doctor in the State.

Pediatrics has possibly been more neglected than any other branch of medicine. Although about one-third of the practice of the doctors is among infants and children, few of them have apparently given much time and thought to this subject, especially to infant feeding, some practitioners depending largely upon literature advertising some food or foods as ideal and applicable to all feeding cases. It is certain that the importance of infant feeding has not yet reached its full realization. There is no better way than this to practice preventive medicine. A baby that is given the proper start and physical foundation is not only less susceptible to disease, but has much greater resistance to combat it, should it develop.

It is a daily occurrence to find surgeons, obstetricians, general practitioners, midwives, and kind neighbors attempting to feed infants without realizing the importance of being properly prepared to do so or the danger of damage which they might do. There is a reason for this condition The difference of opinion among the pediatricians and the rapidly changing and different methods of feeding are obviously confusing. There are, however, some general principles which are always applicable and useful. Every infant and child is an individual patient and should be treated as such. With these principles in mind and a fair knowledge of pediatric diagnosis and infant feeding, many feeding cases that would possibly be a problem will be simplified.

It is not necessary to memorize long complicated formulas or to have an elaborately equipped office to do good pediatrics. In the rural sections where there is an abundance of milk, fresh fruits, and vegetables, and sunshine, very effective work may be done.

Infant mortality has decreased to less than one-half of what it was fifteen years ago. No one agency or phase of specialization can take all the credit for this. Better obstetrics, prenatal care, postnatal care, better methods in infant care by pediatricians, more interest in postgraduate education, public health service, and education of mothers, all are important factors in this great accomplishment. Still there is a field for more improvement and it will be a beneficial service to the welfare of the public and to the individual doctors if the Medical Society of Virginia continues to sponsor these clinics and has more of them, and if every practitioner in the State will be ambitious enough to give this most important branch of medicine his earnest consideration.

P. W. Miles, M. D.,
Member of Child Welfare Committee, M. S. V.

Postgraduate Study.

It is unusual nowadays to read any medical journal without finding something said about clinics—postgraduate education, and the importance of keeping abreast of the times. Not only are the medical journals stressing the need of postgraduate study for physicians, but the laymen are alive to this also, and newspapers and popular magazines make frequent reference to the popular demand for more and better service from physicians.

The intelligent mother of today knows more about feeding the baby than her doctor who fails to keep himself informed. The scientific investigations and widespread propaganda of those engaged in health work and preventive medicine are gradually wiping out diseases that a few years ago were considered inescapable.

From an address of Dr. Henry A. Christian, in the *Journal of the A. M. A.* for March 28, 1931:

"Physicians can be divided into two great groups, those that are learning and those that are forgetting, those that each year know more, and those that each year know less. There seems no third group, those that are stationary.

"A few physicians increase in knowledge from within and grow from their own doing. These are the innate investigators. The rank and file require outside help to grow and to progress. Books, meetings, contacts, discussions, teachers are our armamentarium for progress. Like the 'spring tonic' of past days, all of us need some of this medicine, at least annually, better if it comes more frequently. A large majority of physicians know their need and seek treatment. Postgraduate instruction is a potent prescription to this end, if it can be carried to the proper dispenser for filling.

"Postgraduate instruction should commence with the physician's graduation from the medical school. It should continue throughout his life."

Let us examine ourselves. Are we learning or forgetting? Going forward or backward? As we near the close of another year let us gird ourselves for larger and better service.

I. C. Harrison, M. D.,
President-Elect and Chairman, Department of Clinical Education.

Information

All members of the Medical Society of Virginia are requested to write for any information desired on any subject relative to these Extension Courses in Graduate Medical Education either to the Executive Secretary, Mr. George W. Entsler, P. O. Box 707, University, Va., or to the Chairman of the Department.

Scheduled Meetings

The Southwestern Virginia Medical Society

Is to hold its regular semi-annual meeting at Marion, Va., September 24th and 25th. The meeting will be opened as usual with a banquet on the 24th and followed by a program consisting of the President's address by Dr. E. G. Gill, Roanoke, and a paper by Dr. Horton Casparis, of Vanderbilt University, Nashville, Tenn., on "Allergy in Children."

The program for the 25th will consist of papers by the following men: Dr. I. A. Bigger, Richmond, "Infections of the Hand and Forearm"; Dr. Thomas E. Spessard, Roanoke, "General and Focal Signs of Intracranial Tumors"; Dr. J. C. King, Radford, "Prognosis in Psychiatric Cases"; Dr. Geo. B. Lawson, Roanoke, subject unannounced; Dr. F. H. Smith, Abingdon, "Coronary Disease as a Factor in Failing Myocardium"; and Dr. J. Glenn Cox, Hillsville, subject unannounced.

Dr. A. M. Showalter, Christiansburg, is secretary of this society.

The Clinch Valley Medical Society

Will hold its semi-annual meeting at Gate City, Va., September 26th, under the presidency of Dr. N. W. Stallard, of Dungannon. Dr. C. B. Bowyer, Stonega, is secretary. It has been decided to have a symposium on Vascular Hypertension for this meeting, one of the speakers for this being a member of the medical staff of Mayo Clinic. Several other members and visitors will present papers.

The Southside Virginia Medical Association,

Of which Dr. Ruth Mason, Petersburg, is president, and Dr. R. L. Raiford, Franklin, secretary, is holding its next quarterly meeting at Piedmont Sanatorium, Burkeville, on September the 8th. An interesting program has been arranged.

University of Virginia Clinics.

Announcement has been made that the Postgraduate Clinics to be held at the University of Virginia Hospital, will be on October 22nd and 23rd.

Proceedings of Societies

The Fauquier County Medical Society

Was entertained by Dr. M. B. Hiden, July 30, 1931, at the Allison House, Warrenton, Va., with the vice-president, Dr. J. E. Knight, presiding. Following routine business, the following officers were unanimously elected: President of the Society and Chief of Staff of the Fauquier Hospital, Dr. Richard Mason, The Plains; first vice-president and assistant Chief of Staff, Dr. John T. Sprague, Warrenton; second vice-president, Dr. Henry L. Townsend, Marshall; treasurer, Dr. J. Frank Folk, Warrenton; and secretary, Dr. M. B. Hiden, Warrenton. The following doctors were elected to membership in this society: Drs. David W. Kelly, Jr., and O. Kyle Burnett, of Culpeper, and Dr. Stewart McBryde, of Manassas.

Dr. Hiden urged that as many of the doctors as possible attend the meeting of the State Society in Roanoke this autumn. He requested the delegates to this meeting to do all that they could in order to prevent all doctors of questionable repute from practicing. He stated that lawyers disbar undesirable practitioners, and we should be allowed to take similar action in the medical profession.

Dr. Richard Mason reported a cast of Osteogenesis Imperfecta, a very rare bone disease and showed the patient afflicted with this malady—a girl, 16 years of age, who had from minor causes broken her legs fourteen times. The paper was discussed by Drs. W. O. Bailey, O. K. Burnett, M. B. Hiden, and Major Benjamin L. Jacobson.

Dr. J. T. Sprague made an excellent speech on State and Federal Medicine and brought out clearly the activities of the U. S. Public Health Service. This was discussed by Dr. W. O. Bailey. On motion of Dr. Sprague, it was voted to request Dr. G. Frank Simpson and Dr. W. O. Bailey of the Public Relations Committee of the State Society to investigate this subject and to make a report on it at the Roanoke meeting.

After the business meeting adjourned, dinner was served, and the physicians and their guests had a pleasant social meeting for about two hours.

The Mid-Tidewater Medical Society

Held its regular quarterly meeting aboard "Camp Chesapeake" on Mobjack Bay, July 28th, at which time the members and visitors were the guests of Dr. Blair Spencer and the other doctors in the County of Gloucester.

Delegates were elected to the Medical Society of Virginia meeting in Roanoke in October. Those elected from the various counties are as follows: Drs. E. C. Cobb from Caroline; Thos. B. Latane from King and Queen with R. D. Bates alternate; William Gwathmey from Middlesex; Rob. R. Hoskins from Mathews; E. L. W. Ferry from Essex; M. H. Eames from New Kent; Harry Tabb from Gloucester; L. O. Powell from York; and M. H. Harris from King William. Dr. R. D. Bates, Councilor from the District, was designated to act for the society at the Roanoke meeting.

Dr. E. C. Cobb was elected a member from Caroline County.

The next meeting will be held at Millers Tavern on the fourth Tuesday in October, at which time officers will be elected for the next calendar year.

Dr. Wm. Gwathmey, Ruark, is president of this society and Dr. M. H. Harris, West Point, secretary.

Augusta County Medical Association.

Decision to operate a county dispensary, reports of clinical cases and election of officers were highlights of the banquet meeting of this Association held in August. Dr. M. J. Payne acted as toastmaster and the principal speaker was Dr. F. N. Brand, medical missionary from Korea, who was visiting in Staunton.

The following officers were elected for the ensuing year: Dr. W. C. Roller, Fort Defiance, president; Drs. T. H. Rolston, New Hope; F. P. Floyd, Waynesboro; and George H. Thomas, Staunton, vice-presidents; Drs. W. T. Hartman, Swoope, and T. M. Parkins, Staunton, were re-elected secretary and treasurer, respectively.

News Notes

Fall in Line for Roanoke.

This issue of the MONTHLY is our *Program Number* and also has an excellent division devoted to Roanoke—our Convention City for this year. We hope every member of the Medical Society of Virginia will read this issue and then "fall in line" to attend the meeting.

The local doctors have prepared lovely entertainment for the doctors and ladies accompanying them. They strongly urge that hotel reservations be made as soon as possible.

The scientific program in addition to a number of interesting volunteer papers, will include two guest speakers of our president, Dr. J. Allison Hodges, of Richmond. They are are Dr. Russell L. Cecil, formerly of this State but now one of the prominent physicians of New York City, and Dr. Ralph P. Truitt, of Baltimore, Medical Director of the Mental Hygiene Society of Maryland and clinical professor of psychiatry at the University of Maryland.

There will be scientific and commercial exhibits and some interesting clinics. The latter will be held on Tuesday afternoon under the auspices of the Roanoke Academy of Medicine and will be on Medicine by Dr. Russell L. Cecil, Pediatrics by Dr. Charles G. Kerly, of New York City, and Obstetrics, the speaker to be announced.

You cannot afford to miss this excellent program, so come early and stay through the Thursday afternoon session which is to be held at Catawba Sanatorium. You should not miss the opportunity to visit this splendid State institution so beautifully located.

The Virginia Pediatric Society

Will hold its annual luncheon meeting in the Red Room of Hotel Patrick Henry, Roanoke, at 1:00 P. M., on Wednesday, October 7th, during the time of the meeting of the Medical Society of Virginia. The president, Dr. W. B. McIlwaine, of Petersburg, will preside. Dr. Horton Casparis, professor of pediatrics at Vanderbilt University, Nashville, Tenn., will be the guest speaker and will give an address on Tuberculosis in Children: Prevention and Control.

Reservations for the luncheon should be made through the secretary, Dr. J. B. Stone, 2042 Park Avenue, Richmond, Va., or at the desk when registering at the Roanoke meeting.

Married.

Dr. Alexander Gordon Gilliam, Petersburg, Va., and Miss Laura Edmondston Venning, University, Va., June 20th Dr. Gilliam graduated from the University of Virginia this year and received an appointment to the University of Virginia Hospital.

Dr. Frank Duncan Costenbader, of the class of '29, University of Virginia, and Miss Mary Young Barner, of Dinwiddie County, Va., August 8th. They are at present in Washington, D. C., where Dr. Costenbader is located at the Episcopal Hospital.

Dr. Edward A. Holmes, Marion, Va., and Mrs. Margaret Hoge, Burkes Garden, Va., August 20th.

The International Association of Industrial Accident Boards and Commissions

Will hold its Eighteenth Annual Convention, October 5th, 6th, 7th, 8th, and 9th, at Richmond, Va., under the presidency of Col. Parke P. Deans, Member, Industrial Commission of Virginia. Headquarters will be at John Marshall Hotel.

There will be two medical sessions on Wednesday, the 7th, the one in the morning under the chairmanship of Dr. G. H. Gehrmann, Medical Director, E. I. Dupont de Nemours and Company, Inc., Wilmington, Del., and the afternoon session under the chairmanship of Dr. H. U. Stephenson, Chief Medical Examiner, Industrial Commission of Virginia, Richmond, Va., both of whom are vice-presidents of the general organization. The following is a list of the speakers for the morning session with titles of their papers: Dr. Henry Field Smyth, Philadelphia, Pa., on Should a Course in Industrial Medicine be Included in the Curriculum of Medical Schools?, this to be discussed by Dr. W. T. Sanger, President of the Medical College of Virginia, and Dr. J. Allison Hodges, President of the Medical Society of Virginia, both of Richmond. Dr. Henry H. Kessler, Newark, N. J., will speak on Settlements as a Thera-

pentic Measure, which will be discussed by Drs. J. Morrison Hutcheson, Richmond, and F. H. Smith, Abingdon. Relationship of Arthritis and Traumatic Injuries by Dr. G. H. Watson. New York, will be discussed by Drs. H. Page Mauck and William Tate Graham, both of Richmond.

At the afternoon session, Dr. Richard H. Price, Wilmington, Del., will speak on Care and Treatment of Injured to Avoid Traumatic Neurosis, and this will be discussed by Drs. R. Finley Gayle, Richmond, and W. R. Williams, Richlands. The Value and Equipment of a First Aid Station by Dr. H. G. Longaker, Newport News, will be discussed by Drs. C. B. Bowyer, Stonega, and S. E. Gunn, Hopewell. Major General H. L. Gilchrist, Washington, D. C., will speak on The Differential Diagnosis of Traumatic and Occupational Chemical Injuries, and Drs. Warren T. Vaughan and Dean Cole, both of Richmond, will discuss it.

Approximately 250 representatives of various industrial accident boards and commissions in the United States, Canada and outlying possessions of this country are expected to attend the convention.

Dr. Thomas C. Lawford,

Of the class of '29, University of Virginia, Department of Medicine, is opening an office for general practice in Hilton Village, Va., September 1st. He interned one year at the Orange (N. J.) Memorial Hospital and served one year as resident at the Elizabeth Buxton Hospital, Newport News, Va.

Associated With Dr. Wheeldon.

After September 1st, Dr. M. Melvin Clark, who completed his orthopaedic training in Boston and who has recently been at the Gates Memorial Hospital in Elyria, Ohio, will be associated with Dr. Thomas Wheeldon, in Richmond, Va.

Graduate Fortnight.

The fourth Graduate Fortnight of the New York Academy of Medicine on "Disorders of the Circulation" will be held from October 19th through the 30th, with headquarters in the Academy building, 2 East 103rd Street, corner Fifth Avenue, New York City. *The profession generally is invited to attend.* No fees will be charged for registration or for attendance at any of the clinics or meetings of the Fortnight. The program comprises Specially Arranged Coordinated Afternoon Clinics, bearing upon the general subject, which will be presented in twelve of the large hospitals of the city; Evening Sessions at which well-known authorities will discuss the general subject from many viewpoints; and a Scientific Exhibit of anatomical, bacteriological, and pathological specimens, and research material bearing upon the various aspects of the subjects discussed at the evening meetings.

The week following the Fortnight, there will be a Course in Fracture Treatment, comprising ten clinic lecture demonstrations, given by the New York and Brooklyn Regional Fracture Committee of the American College of Surgeons. Fee for this last course is $25, and attendance will be limited.

Those interested in attending the Fortnight, should apply at once for Clinic Registration Form to the Academy, at address given above, as Registration forms should reach the Academy by September 15th, or earlier.

Dr. H. Cantor

Has opened an office in the Medical Arts Building at Petersburg, Va., where he is engaged in the practice of Surgery and Obstetrics. Dr. Cantor is a graduate of Harvard Medical School and received his training at Sinai Hospital of Baltimore and Knickerbocker Hospital of New York. At Knickerbocker Hospital, Dr. Cantor did much major surgery under Dr. Elsworth Eliot, former president of American Surgical Association.

Dr. H. J. Warthen,

Who for the past four years has been assistant resident surgeon and assistant in Johns Hopkins Medical School, has been appointed resident surgeon at John Hopkins Hospital, Baltimore, and entered upon his duties there on September 1st. Dr. Warthen is a graduate of the University of Virginia, Department of Medicine, class of '25, and served his internship at St. Elizabeth's Hospital. Richmond.

Dr. and Mrs. E. C. S. Taliaferro

Expect to return to their home in Norfolk, Va., about the 10th of September, after several weeks spent travelling in England and on the continent.

New Health Officer in Albemarle County.

Dr. E. L. McQuade, formerly with the Virginia State Department of Health, but who recently completed a scholarship course at Johns Hopkins University awarded him while he was with the Virginia Health Department, entered upon his new duties as chief health officer of Charlottesville and Albemarle County, Va., the

first of August. He succeeds Dr. George B. Young, resigned because he is retiring from active work. However, Dr. Young will be a member of the County Board of Health and also of the Joint Board.

The Interstate Postgraduate Medical Association of North America

Will hold its annual meeting at Milwaukee, Wis., October 19th-23rd. The program will include speakers of international prominence and every practicing physician can find something to his liking. Dr. Henry A. Christian, Boston, Mass., is president, and Dr. Edwin Henes, Jr., Milwaukee, Wis., secretary, and Dr. Wm. B. Peck, Freeport, Ill., managing director of this association.

News Notes From the Duke University School of Medicine and Duke Hospital.

On July 2nd, Dr. Alfred R. Shands, Jr., held the orthopedic clinic, known as the Rotary Crippled Children's Clinic, at Park View Hospital, Rocky Mount, N. C., at which the initial examinations were made of the children and advice given regarding treatment. Every third Tuesday Dr. Shands holds an orthopedic clinic at Goldsboro, N. C.

On July 6th, Dr. Christopher Johnston read a paper on the Complications of Diabetes at a meeting of the Gaston County Medical Society, Gastonia, N. C.

In October, 1931, for the first time, all four classes of students will be enrolled in the medical school, with sixty in the first year class, forty-nine in the second, eighteen in the junior, and eighteen in the senior class, making a total of 145 students. The seventy-eight students admitted in 1931 are from fifty-three different colleges and universities. Forty-one are from North Carolina and the remainder from twenty-two other States. The first class will be graduated in June, 1932.

A chapter of Alpha Omega Alpha, the honorary medical fraternity, was established here on April 29, 1931.

Thirty-five students were admitted to the School of Nursing on January 2, 1931, and after a rigid probationary period, fifteen were retained as intermediate students. The School of Nursing has been visited and inspected by Miss Nina D. Gage, Executive Secretary of the National League of Nursing Education, Miss Dorothy Deming, Public Health Nurses Association, and Miss Mary M. Roberts, Editor of *The American Journal of Nursing.*

Four students have been admitted to the School of Dietetics. One has completed her year's course of training.

The prerequisites of 3½ years of nutrition in an accepted university have been approved by the Educational Section of the American Dietetic Association.

Dr. Nelson Mercer,

Richmond, Va., was reappointed a Lieutenant-Colonel, Medical Corps Reserve, U. S. Army, on August 1, 1931.

Dr. Mercer and his wife returned home the middle of August after a motor trip through New York State and Vermont where they visited relatives and friends.

Dr. Ray A. Moore

And family, of Farmville, Va., motored to Boston, about the middle of July. They will be there until about the middle of September, as Dr. Moore is doing postgraduate work in some of the hospitals connected with the Harvard Medical School.

Dr. J. Lewis Blanton,

Of the class of '24, Medical College of Virginia, announces his removal from Trenton, N. J., to Fairmont, W. Va.

President of American Medical Association of Vienna.

Dr. Clarence W. Trexler, of class of '26, University of Virginia, Department of Medicine, was unanimously elected President of the American Medical Association of Vienna, in July. He succeeded Dr. Harold Schilling, of New Hampton, Iowa. All officers of this Association are elected to serve for six months.

Before going to Vienna, Dr. Trexler was director of the Samuel Mahelona Memorial Hospital and Government physician for Kawaihau District, Kauai County, Hawaii. Upon leaving Vienna about December 1st, Dr. Trexler will locate in Honolulu, Hawaii, with offices in Young Building.

Young Workers Need Physical Care.

The need for the physical examination and care of young workers is evidenced, according to a supervising physician of New York City's department of health, by the fact that 6,532 defects of 234 varieties were found among 2,691 boys 14 to 17 years of age en-

rolled at the West Side Continuation School from 1926 to 1929.

Dr. John McIntyre Nokes,

Recently instructor in Obstetrics and Gynecology at Vanderbilt University Hospital at Nashville, Tenn., has returned to Virginia and become assistant professor of Obstetrics and Gynecology at the University of Virginia. Dr. Nokes is an alumnus of the University of Virginia, Department of Medicine, in the class of '27.

Dr. Tiffany J. Williams, of Great Falls Clinic, Montana, as was recently announced, is now professor of these branches at the University of Virginia.

Dr. Barton B. McCluer,

For some time at Bon Air, Va., is now located at Rockbridge Baths, Va.

Dr. Joseph B. Graham,

Of the class of '28, University of Virginia, Department of Medicine, who has spent the past year at Bell Memorial Hospital, Kansas City, Kan., has located in Richmond, Va., and is connected with the Department of Surgery at Memorial Hospital.

Dr. U. E. Massie,

After a year at Lewis-Gale Hospital, Roanoke, Va., has located for practice at Fincastle, Va. He was graduated from Medical College of Virginia in the class of '30.

The American Public Health Association

Is to hold its annual meeting in Montreal, Quebec, September 14th-17th, with headquarters at the Windsor Hotel. The program, as usual, promises much of interest. Surgeon General Hugh S. Cumming, of the U. S. Public Health Service, Washington, D. C., is president, and W. F. Walker, 450 Seventh Avenue, New York, secretary.

Dr. Aubrey Webster Armentrout,

Resident Surgeon at the University of Virginia Hospital for the past year, has opened offices for practice in Surgery and Gynecology at 110 North Braddock Street, Winchester, Va.

Dr. Armentrout is a graduate of the Johns Hopkins Medical School. He spent three years as intern in the Jefferson Hospital in Roanoke. During the session of 1929-1930 he held a Phillip Francis DuPont Research Fellowship in Surgery. During the tenure of this Fellowship he completed an experimental investigation on Cerebral Embolism and Thrombosis, in partial fulfillment of the requirements for a Master of Science Degree in Surgery awarded by the University of Virginia in June, 1930.

Dr. M. L. Anderson,

Richmond, Va., has been reappointed as a major in the medical reserve corps, according to information given out at the Eightieth Division headquarters.

Dr. John B. McKee,

Of the class of '28, University of Virginia, recently completed three years of postgraduate work in internal medicine at the New York Postgraduate Medical School and Hospital and has opened offices at 212 West Boscawen Street, Winchester, Va. His practice will be limited to internal medicine, electrocardiography being one feature of his work.

Medical College of Virginia Opens This Month.

It is announced that the Medical College of Virginia will open for its ninetp-fourth session on September 15th, and that a very satisfactory enrollment is expected.

Dr. Donald O. Hamblin

Will open offices at 1112 Church Street, Lynchburg, Va., on September 15, 1931, for the practice of general medicine.

Dr. Hamblin is a graduate of the University of Virginia, and has recently completed his residency in Obstetrics and Gynecology at the University of Virginia Hospital.

Dr. Charles W. Putney,

Staunton, Va., has returned home after spending some time in postgraduate study in Vienna, and visiting clinics in other European cities.

Dr. Ben H. Knight,

Of the class of '30, Medical College of Virginia, upon completion of his internship at Johnston-Willis Hospital, Richmond, has located in Surry, Va., for general practice.

Children's Accidents.

More than 18,000 children in the United States were killed by accidents in 1930, and a very large number were seriously injured. Yet these startling figures represented a considerable decrease in accidental deaths of children, especially those of school age, according to the supervisor of New York City's child-safety demonstration. He found that low intelligence, worry, weariness, day-dreaming, love of adventure, and rebellion against authority are among the mental causes of accidents, and

he suggests that parents and teachers should take them into consideration in the training of children.

Dr. and Mrs. L. A. Law,

Alberta, Va., returned home the latter part of August, after a vacation spent at Virginia Beach, Va.

Dr. Douglas F. Love,

Recently of New Market, Va., has just moved to Bartley, W. Va., where he will continue his practice.

Dr. Lewis W. Angle,

Of the class of '26, Medical College of Virginia, announces the opening of his offices in Huron Building, 905 North Seventh Street, Kansas City, Kan. His practice will be limited to General, Plastic, and Chest Surgery.

Dr. Herman F. Oppleman,

Who recently completed his residency at St. Vincent's Hospital, Norfolk, Va., has located at 2222 West Grace Street, Richmond, for general practice. He is a member of the class of '30, Medical College of Virginia.

Dr. Emily Gardner,

Of Franklin, Va., formerly connected with the Bureau of Child Welfare of the Virginia State Department of Health, who has been doing some postgraduate work in pediatrics in London, has been granted the Mary Putnam Jacobi Fellowship fund to continue her work abroad for a while longer. Since going abroad, she has also spent one month motoring on the continent.

Dr. E. V. Richardson,

An alumnus of the Medical College of Virginia, class of '30, has just located at Glade Springs, Va., for the practice of medicine. Dr. Richardson served one year as an intern at the University of Wisconsin Hospital, Madison, Wis., and has just completed a junior internship at the Johnston Memorial Hospital, Abingdon, Va.

American College of Surgeons.

The Clinical Congress and annual meeting of the College will be held in New York City, October 12th to 16th, with headquarters at the Waldorf Hotel. Information about the Congress may be obtained from the Director General, Dr. Franklin H. Martin, 40 East Erie Street, Chicago. Dr. C. Jeff Miller, of New Orleans, is this year's president.

Reappointed Health Commissioner of West Virginia.

Dr. W. T. Henshaw was recently appointed State Health Commissioner of West Virginia, a position which he has held since 1921. Dr. Henshaw has accomplished some notable work during his administration.

The American Association of Obstetricians, Gynecologists and Abdominal Surgeons

Will hold its annual meeting at White Sulphur Springs, W. Va., September 14th, 15th, and 16th, under the presidency of Dr. Arthur H. Bill, of Cleveland. Dr. Magnus A. Tate, of Cincinnati, is secretary.

Dr. Millard P. Doyle

Has returned to his home in Norfolk, Va., after a two months' stay in Europe, where he attended the International Rotary Convention in Switzerland, as a delegate from the Norfolk Rotary Club.

For Sale—

Office furniture and instruments for nose and throat work, account death. Address Mrs. M. R. Irby, 200 West Grace Street, Richmond, Va. (*Adv.*)

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For Sale—

McCaskey System cabinet; large model, slightly used; in excellent condition; cost $285, but will sell at bargain. Address No. 299, care this journal. (*Adv.*)

Obituary Record

Dr. David C. Cline,

Dumfries, Va., died August 17th, after a short illness. He was 63 years of age and a graduate of the Lincoln Memorial University Medical Department, Knoxville, Tenn., in 1911. Dr. Cline was a native of West Virginia but had been a resident of Dumfries for twenty-six years, where he was a leader in civic and community movements. His second wife and six children survive him.

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GASTRO-DUODENAL HEMORRHAGE.*

By R. L. PAYNE, M. D.,
and
R. DUVAL JONES, JR., M. D.,
Norfolk, Va.

The treatment of gastro-duodenal hemorrhage is always an interesting problem, first because of the diverse pathologic processes which may be the cause of hemorrhage, and secondly, because of the fact that satisfactory results in the treatment of these cases depend entirely upon a correct diagnosis and the proper management of the disease which is responsible for the bleeding. For this reason, it is obvious that the surgeon should be on his guard never to make too hasty a diagnosis. The case should be carefully studied and the patient closely observed for a period of time before deciding definitely upon any plan of treatment other than for hemorrhage *per se*.

Although gastro-duodenal hemorrhage is always significant, whether there be a slow oozing which is discovered only by examination of the stools for occult blood or a sudden massive hemorrhage, there is seldom any justification for immediate surgical intervention. The physician in charge should bear in mind the fact that death seldom results from a single gastric or duodenal hemorrhage. Smithies states that about 2 per cent of the sudden massive gastric hemorrhages become rapidly fatal. However, the risk of an operation during or immediately following such a hemorrhage is much higher. This point was emphasized particularly by Rodman who contended first, that the patient is in no condition for operation, secondly, that the emergency of the situation does not permit time for careful differential diagnosis, and thirdly, that recovery is usual after a single hemorrhage. Furthermore, according to Balfour the experience of most surgeons in this country has been that the bleeding point, though hemorrhage may occur from a vessel of considerable size, is often extremely difficult or impossible to find even after the stomach or duodenum has been opened. In this event the patient may be subjected to a lengthy and sometimes futile exploration at a time when the surgeon can ill afford to take the risk.

The most common signs of massive hemorrhage from the stomach or duodenum are, in addition to shock, melena and haematemesis. One must remember, however, that in rare instances the hemorrhage may be fatal without causing haematemesis. Furhermore, haematemesis does not necessarily mean actual gastric or duodenal hemorrhage. It is by no means uncommon for a patient to vomit blood which has been swallowed following hemorrhage from the mouth, nose, pharynx or lungs. Particularly is this true in accident work where haematemesis may be very misleading unless the surgeon constantly bears in mind such possibilities. Having ruled out an extra gastric source of hemorrhage, the immediate problem becomes the determination of the type and location of the pathological process which is responsible for the bleeding. It is a well recognized fact that the causative factors in gastro-duodenal hemorrhage may be actual lesions of the stomach or duodenum, general systemic disorders or disease of some remote organ, as the liver, pancreas, spleen or appendix.

The most common lesions of the stomach or duodenum which may produce hemorrhage are, in order of their frequency, duodenal ulcer, gastric ulcer, duodenitis or gastritis, carcinoma and benign tumors. Syphilis of the stomach may be the cause of hemorrhage but it is questionable whether or not gastric hemorrhage attributed to syphilis of the stomach is due in most instances to an actual syphilitic lesion of the stomach or to secondary changes produced by syphilis in other organs, especially the liver.

After careful observation, if there is no evidence of disease in the stomach or duodenum, the following conditions should be suspected as possible causes for hemorrhage; cirrhosis of

*Read before the Seaboard Medical Association of Virginia and North Carolina, December 5, 1930, at Elizabeth City, N. C.

the liver, gall-bladder disease, jaundice, appendicitis, splenic anemia, purpura, acute infectious diseases, vicarious menstruation, and various types of focal infection. Rosenblum and Gasul have recently reported a case of fatal bleeding from a gastric erosion complicating lobar pneumonia.

When the physician is called to see a patient with gastric or duodenal hemorrhage, the first thing to be considered is the treatment of hemorrhage. If the bleeding is of a slow chronic type, gastro-intestinal studies may be begun immediately. On the other hand, if a massive hemorrhage has occurred, the patient should be put to bed at once, preferably in the hospital, and morphine sulphate administered hypodermically in sufficient quantities to keep the patient quiet. Fluids should be administered by proctoclysis or hypodermoclysis and the stomach kept at rest as nearly as possible. Under such treatment the patient will continue to bleed until the blood pressure reaches a very low level, at which time the bleeding will cease in the great majority of cases.

It is generally considered unwise to give these patients transfusions during or immediately following acute hemorrhage because of the fact that theoretically an elevation in blood pressure will cause the bleeding to continue or, in recently checked hemorrhages, may be responsible for the blowing out of a poorly formed thrombus and secondary hemorrhage. Nevertheless there are rare instances when, in spite of conservative treatment, the bleeding cannot be checked, or a second massive hemorrhage occurs within a few days of the first. In such cases operative treatment becomes imminent and transfusions should be employed as a pre-operative measure. In the case of chronic gastro-duodenal bleeding, the resistance of the patient may sometimes be appreciably increased during the period of observation by the administration of repeated small transfusions. This applies particularly to benign tumors of the stomach and splenic anemia.

A single gastro-duodenal hemorrhage without symptoms or positive roentgenologic findings is never, except under conditions mentioned above, a just indication for surgical treatment. It is a common thing to find a patient who has years previously experienced a massive hemorrhage of unknown cause, but has since then enjoyed good health with no further evidence of bleeding. All cases, however, regardless of symptoms, are deserving of a thorough clinical study. Occasionally the lesion is revealed only by roentgenologic investigation, as a small but definite percentage are due to bleeding ulcer of the silent type. Balfour states that 8 per cent of 1,072 cases of duodenal ulcers operated upon at the Mayo Clinic were without symptoms. X-ray examination, though definitely indicated in certain cases, should be practiced with great care and should never be employed until two or three weeks after all signs of bleeding have disappeared. Smithies says "Every year it has been my misfortune to observe individuals who have experienced acute gastric hemorrhage and upon whom, even while bleeding persisted, the X-ray method of investigation has been employed. In many of these patients heavy barium mixture has not only prolonged hemorrhage and made it more severe, but in numerous instances the consequences have been fatal on account of resultant perforation."

In the study of all cases of obscure gastro-duodenal bleeding one should search diligently for any possible focus of infection. According to Balfour, Eusterman claims to have seen several cases where hemorrhage occurred following operative treatment and the patients were cured by the removal of abscessed teeth. Where time is an important factor and the surgeon finds it necessary to operate before all foci of infection can be eradicated, it is equally as important that this matter be attended to as soon as the patient has recovered from operation. Removal of teeth or tonsils or clearing up of chronic prostatitis will often prevent recurrence of hemorrhage.

As regards the indication for surgical treatment of gastric or duodenal hemorrhage, there is a difference among men of wide experience, Yet there are certain conditions under which exploration is clearly indicated. As we have mentioned above, the occurrence of a second massive hemorrhage within a few days of the first necessitates immediate operation. In fact repeated hemorrhages from the stomach or duodenum, whether large or small, are indications for surgical treatment.

Occasionally where the patient is of the obese type carrying an age around forty to fifty or above, it is difficult to decide upon an operation if there is no history of ulcer, because changes in the liver may be responsi-

ble for the hemorrhage. This is particularly true in male patients.

There is little or no argument regarding the indication for surgery where it is possible to make a positive diagnosis of gastric or duodenal ulcer of the hemorrhagic type. An operation should be advised wherever in the presence of hemorrhage there is a history of dyspepsia suggestive of ulcer, or where a roentgenologic diagnosis of ulcer is made even in absence of a positive history. The risk entailed in the surgical treatment of these cases is less than that of carrying the ulcer, as once bleeding has occurred from a gastric or duodenal ulcer the patient is constantly in danger of a massive hemorrhage. On exploration a thorough examination of the stomach and duodenum should be made. If no lesion can be demonstrated by palpation, it is advisable to open the stomach at the pyloric end, extend the incision into the duodenum and inspect the posterior wall under direct vision. Where such a procedure is carried out routinely it is surprising to note how frequently lesions will be found which cannot be demonstrated by the roentgenologist. When no lesion is found, in spite of a positive history, the probability is that an ulcer has been overlooked, especially in the absence of extra-gastric pathology which may account for the bleeding.

According to Balfour, gross hemorrhage occurred in about 18 per cent of duodenal ulcers and in about 20 per cent of the gastric ulcers which were operated upon at the Mayo Clinic in 1921 and 1922. From eighty-four cases operated upon in Norfolk at St. Vincent's hospital in the past five years. twenty-two cases or 26 per cent were complicated by hemorrhage. Of these ten were gastric and twelve duodenal.

When duodenal ulcer is found on exploration, the question of deciding between a direct and an indirect operation immediately arises. If the lesion is found on the anterior wall, the duodenum is freely movable and the inflammatory process is not too extensive, a local excision of the ulcer and pyloroplasty, with the removal of a portion of the pyloric sphincter is unquestionably the operation of choice. Such a procedure not only gives the greatest protection against future hemorrhage from the known ulcer but enables the surgeon to examine the posterior wall of the duodenum for the so-called kissing ulcer which, if found, may be removed by the actual cautery and the defect in the mucous membrane closed by a figure of eight suture of chromic catgut. In reconstructing the pylorus, the defect in the anterior wall should be closed in the transverse direction, thereby insuring a sufficiently large pyloric opening.

It is interesting to note that in 1919 Balfour reported that 13 per cent of the patients operated upon for duodenal ulcer complicated by hemorrhage had hemorrhage after operation, but that not in a single instance had the ulcer been excised. However, in the heat of enthusiasm one should not forget the fact that an indirect operation offers a good chance of relief; and that an easily performed gastro-jejunostomy carries much less risk than a technically difficult excision and gastro-duodenostomy. For this reason it is often the wiser procedure. When gastro-enterostomy is performed, a posterior anastomosis is preferable to an anterior, but in cases where the omentum is fat, or the posterior wall of the stomach is bound down by adhesions an anterior gastro-enterostomy may be very useful. The proximal loop should be long enough to swing freely over the omentum and a side to side anastomosis made between the most dependent part of proximal loop and the distal loop in order to prevent damming back of secretions into the duodenum. Where gastro-enterostomy is employed, it is often wise to puncture the base of the ulcer with the cautery and close the opening with chromic catgut.

When exploration fails to reveal a lesion of the stomach or duodenum, in spite of the fact that pre-operative signs point to ulcer, a reconstruction operation on the pylorus may protect the patient against future hemorrhage. Particularly is this true when no other lesion is found which might have accounted for the bleeding or where the duodenal mucosa is red and congested. If on the other hand pathology is found elsewhere in the abdomen (cholecystitis, appendicitis, or splenomegaly in particular) eradication of such foci may offer complete relief.

Gastric ulcer, regardless of hemorrhage, is an indication for surgery, because of the possibility that the lesion may be malignant. Only when the general health of the patient is such that surgery is almost prohibitive should any question arise. The condition of the patient, the size and location of the lesion should all be considered in deciding what procedure is to be carried out. If the patient's

general condition permits, the lesion is accessible and the stomach easily mobilized, partial gastrectomy is the operation of choice. It not only removes the source of hemorrhage, but offers an added precaution against recurrence in case the lesion proves to be malignant. A less formidable procedure which may be employed where resection seems inadvisable is local excision by knife or cautery and closure of the defect with chromic catgut sutures. Occasionally, when the lesion is situated in the cardiac end of the stomach, the surgeon must resort to gastro-enterostomy which sometimes gives very satisfactory results, but offers less protection than gastrectomy or local excision. Finally, in well selected cases where the lesion is large and situated high in the fundus of the stomach, jejunostomy for feeding purposes may be employed and the stomach put at absolute rest. I have seen several cases treated in this way, where after three to six months, symptoms had subsided and the lesion could not be detected by roentgenologic examination.

Hemorrhage as a complication of carcinoma of the stomach is of minor interest. Gross hemorrhage seldom occurs, and the treatment resolves itself into treatment of carcinoma of the stomach, with one exception. It is occasionally worth while to remove a lesion as a palliative measure where the prospects of permanent cure are hopeless, in order to relieve the patient of the disagreeable and distressing complication of hemorrhage.

Benign tumors of the stomach may cause severe secondary anemia by continuous oozing over a long period of time. They are, unfortunately, often overlooked unless diagnosed by fluoroscopic examination. For this reason one should not fail to keep in mind the possibility of such a lesion where exploration is carried out for unexplained gastro-intestinal bleeding with secondary anemia. The removal of a benign tumor is rarely difficult and the results are practically always satisfactory.

The results of splenectomy in cases of splenic anemia complicated by hemorrhage are less striking than one is often led to believe. T. Grier Miller has recently emphasized this fact and reported four definite cases of splenic anemia from his clinic at the University of Pennsylvania, in which hemorrhages have occurred following splenectomy. He advances the theory that the dilatation and congestion of the veins of the stomach in these cases is due to an active congestion rather than to a passive. His argument is that the essential lesion of the spleen in splenic anemia is sclerotic, leading to obstruction of the circulation through the spleen and, in consequence, to shunting of an increased amount of arterial blood into the gastric vessels. The increased blood supply to the stomach is probably sufficient to account for the varices found in the stomach, lower esophagus and gastric omentum. Under such circumstances transient increases in blood pressure or direct trauma may produce rupture of a vein and profuse gastric hemorrhage.

On the basis of this theory Dr. Miller suggests that in performing splenectomy for splenic anemia associated with gastric hemorrhages, the splenic artery be ligated proximal to its gastric branches. Whether or not this point in technique will materially decrease the percentage of failures in checking gastric hemorrhage by splenectomy remains to be proven, but certainly his line of reasoning seems logical and is in our opinion worthy of trial.

Conclusions

1. Gastric or duodenal hemorrhage is seldom, except under rare conditions, an indication for immediate surgery.

2. There are a great variety of pathological lesions, both intra-gastric and extra-gastric which may be responsible for gastric or duodenal bleeding.

3. Success in the management of these cases depends entirely upon correct diagnosis and proper treatment of the disease responsible for hemorrhage.

4. Roentgenologic examination, while necessary in a small percentage of cases, should be carried out with extreme care and should never be employed until three to four weeks after bleeding has ceased.

5. Transfusion is usually contraindicated during or immediately following gross gastric or duodenal hemorrhage except as a pre-operative measure in extreme cases where the surgeon is forced to operate because of repeated hemorrhage.

6. A single gross hemorrhage without symptoms is not an indication for surgical treatment.

7. Repeated gastric or duodenal hemorrhage is in most cases a surgical indication.

8. Hemorrhage associated with the symptoms or roentgenologic findings of gastric or duodenal ulcer should be treated surigcally.

9. No single operation is the procedure of choice in the treatment of all bleeding gastric or duodenal ulcers.

10. Benign tumors of the stomach may be the cause of severe secondary anemia. They seldom produce gross hemorrhage. Such lesions should always be removed surgically.

11. When splenic anemia is the cause of gastric hemorrhage, splenectomy offers the greatest chance of relief. Ligation of the splenic artery above the gastric branches may, as suggested by Miller, reduce the percentage of poor results following this operation.

12. All possible foci of infection should be eradicated as a pre-operative or post-operative precaution in the treatment of gastric or duodenal hemorrhage.

BIBLIOGRAPHY

Balfour, D. C: Surgical Treatment in the Bleeding Type of Gastric and Duodenal Ulcers. From the Collected Papers of the Mayo Clinic, XI, 1919, P. 80.

Balfour, D. C.: Haematemesis From Collected Papers of the Mayo Clinic, XV, 1922, P. 53.

Balfour, D. C.: The Management of Lesions of the Stomach and Duodenum Complicated by Hemorrhage. From Collected Papers of the Mayo Clinic, XIX, 1927, P. 135.

Miller, T. Grier: Active Congestion of the Stomach as Explanation of Mechanism Involved in Gastric Hemorrhage of Splenic Anemia Med. Clin. North America, 12:1001-1017, January, 1929.

Rosenblum & Gasul: Lobar Pneumonia Complicated by Fatal Bleeding Gastric Erosions. *J. A. M. A.*, 92, June, 1929, P. 2097.

Rodman, W. L.: Gastric Hemorrhage. *Boston Med. and Surg. Jour.* 1900, CXLII, P. 586.

Smithies, Frank: Gastro-Duodenal Hemorrhage—*Annals of Internal Medicine*, I, 1927-1928, P. 637.

805 *Medical Arts Building.*

THE SUBJECTIVE FACTOR IN THE PROGNOSIS OF PULMONARY TUBERCULOSIS.*

By B. M. RANDOLPH, M. D., Charlottesville, Va.

We have reached a fair degree of accuracy in determining the possibility of recovery and repair offered by an individual case of pulmonary tuberculosis. The objective clinical data presented can be fitted in with parallels derived from experience with other cases, so that, after allowing for individual variations in the production and maintenance of specific immunity, we know quite definitely to what extent we may look for recovery from the active disease present, and a restoration to a working status. Such a forecast is, of course, predicated upon the condition that the required therapeutic management be instituted promptly, carried out effectively, and continued long enough.

When we compare possible recoveries, based on such objective data as those described, with the actual results, as shown by a retrospective analysis of case records, we find a marked discrepancy. The question immediately arises, on what does this discrepancy depend?

In my own experience, the failure to obtain the results that we have a right to expect from the clinical findings, when the patients first comes for relief, is most often due to the failure of the patient to carry out and complete the treatment recommended. Such failure is due either to the inability, or to the unwillingness of the patient to do what is necessary, or to keep on doing it long enough. As between these two reasons, I find that the economic factor has less to do with unsuccessful treatment than have character and temperament.

Poor patients, who do the best they can, get better results than the well-to-do who fail to cooperate. There are few communities now-a-days that do not furnish hospital or sanatorium care for indigent cases of pulmonary tuberculosis that offer a prospect of arrest or cure. In cases that are better off, but still too poor to seek institutional treatment in a more desirable climate, very remarkable results have often been obtained by attacking the problem of treatment in the home. The factors that hinder the curable cases of tuberculosis from being cured are more often not poverty, but certain conditions that are associated with the patient. They are either intrinsic, or circumstantial. They appear to lend themselves to classification as follows:

1. Lack of Back-Bone.
2. Self-Conceit.
3. Misapprehension of the Meaning of Cure.
4. Outside Influences.

1. *Lack of Back-Bone.* It is trite, but necessary to say that getting well of tuberculosis requires courage, patience and determination on the part of the patient. Discomfort and distress must be bravely endured. Discouraging incidents must not induce despair. In no situation does character make such returns. We almost come to feel that such character is a physiological function that goes hand in hand with resistance to disease.

2. *Self-Conceit.* We know the old saying that a man is a fool who is his own doctor.

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In no condition does this come nearer to being true than in this disease. There is a type of human being whose knowledge is so superficial, that he regards himself as able to make wise decisions on all subjects. "The way of a fool is wise in his own eyes." We may look out for the patient who, as soon as we have outlined for him his malady and what is necessary for him to do to be cured, begins to ask whether he can do this, or whether it would not be just as well for him to do that. He does not want his inclinations interfered with, and devises judgments that are agreeable to him. We frequently run across such cases in advanced stages, who have been everywhere, consulted everybody, and who have never taken any advice long enough to be benefited. Unless they can be jolted out of their folly at the outset, their fate is inevitable. They keep on the go until they are permanently bed-ridden. Before they die, they often bitterly criticize every one and every place they have visited.

3. *Misapprehension as to Cure.* When a person who has for one or more years been below par, always tired, underweight, dyspeptic, with cough, fever and sweats, finds that he has put on twenty or thirty pounds after taking a cure for six months or more, and has a ravenous appetite with perfect digestion, is free from cough, and can walk three or four miles, coming in feeling like a wrestler; when his physician, who has been his friend and guide through the cure, examines him, and tells him that there are no signs of active disease to be found in his lungs, the impulse of such a person to regard himself as well, and his disease a thing of the past, is apt to be overpowering. Unless he has been very thoroughly taught the pathological behavior of focal tuberculosis, its liability to recur, and the importance of maintaining over a long period of hygiene of life designed to prevent such recurrence, he is very likely, especially after passing from under the eye of the physician who directed his cure, to take up active life too soon and too abruptly. The most tragic cases belong to this group, because they throw away their chance of health, when it is almost in their hands.

4. *Outside Influence.* This factor enters into almost all cases that recur after having started in the right direction. Sometimes in the family, sometimes from outside comes the unsolicited advice of would-be helpers. The patient has not got tuberculosis; or, if he did have it, he is over it; it is silly to talk about any one being sick who looks better than he ever did before; he is hypped, and only needs to get out and act like other people; to forget about it. Such interference, when coming from outsiders, is bad enough; but when it comes from within the family, it may make life intolerable for the patient, or even deprive him of the facilities required for taking the cure. I shall cite cases illustrative of the text.

I. An ambitious young architect of thirty, married, having one child, and doing well in his profession. Has always regarded himself as having rugged health, and did not spare himself, working long hours. He is found to have pulmonary tuberculosis. Is advised to go to Saranac Lake. Refused to take this advice. He went to the Virginia hills, and took rest and fresh air treatment there under my direction, coming to see me from time to time, and corresponding in between. In a year he had gotten a complete arrest, gained thirty pounds, and physical findings and clinical signs of disease were absent. He then, directly against my advice, returned to his home outside of New York, claiming that he could get gradually back into harness and continue treatment there. He got exercise by working in his garden. One day he used intense effort trying to dig up a stump, and "got over-heated," "caught cold," he said. He entered a relapse of his lung disease. He was a suffering invalid till his death, which occurred three years later. He could not be convinced that he was not a well man.

II. A young woman, aged twenty-five, a stenographer in a Government office, developed a very active tuberculous lesion of the lung in January, 1920. She had recently married a young man who had been a patient of mine, and it was through him that I was engaged to care for the case. She was put to bed in a well ventilated room. In two months she had markedly improved. Fever, cough and bacilli in the sputum had disappeared, and later the physical signs of activity were absent. About this time her husband lost his job at the Navy Yard through a curtailment of personnel, which followed the War. In order to continue the treatment, it became necessary for her to go to live with her mother. The mother had never had any use for her daughter's husband, and this antipathy went to the degree of disagreeing with the diagnosis of the physician employed by him. She stopped her visits to me. The mother insisted that her daughter had nothing the matter with her, and that she

should go to work. Unable to stand the continual nagging to which she was subjected, the young woman returned to her job in October. Symptoms of relapse appeared in December, and she died the following July, eighteen months from the time the disease was first recognized. I was called to attend her in the last weeks of her life, and learned the story during this period.

Such cases could be multiplied indefinitely, but these serve the purpose of illustrating how the factors I have mentioned work in actual cases.

The practical question for us as physicians is to ascertain what can be done to equalize this discrepancy between potential and actual cures of consumption of the lungs; to make the science and art of medicine march more nearly abreast. As the causes of the discrepancy lie in the patient's subjective make-up, the remedy lies in ascertaining what the handicapping factors are for each individual patient, and trying to mitigate or remove them.

Where there is lack of courage and patience, there is little hope. Nevertheless, the cure is not so arduous in all cases, and some weaklings stand the vegetative existence of the rest cure exceedingly well. It is important to remember that some natures are essentially parasitic, and will get along well enough if they have some one on whom to lean. A strong mother, wife, or even a husband has saved the life of such a one. It is important to determine the make-up of a tuberculous patient before deciding how to manage his case. To send a weakling off alone to a sanatorium, to face the loneliness, the nostalgia, the monotony of a long endurance test, is something like prescribing a carefully estimated diet of 1300 calories for a typhoid patient who refuses all food.

Of the self-conceited patient, the less said the better. "Fools die for want of wisdom." (Proverbs x, 21). "The way of a fool is right in his own eyes." (Id. xii, 15). "Speak not in the ears of a fool." (Id. xxiii, 9). "Seest thou a man that is wise in his own eyes There is more hope of a fool than of him." (Id. xxvi, 12). Indeed, Solomon might well have been running a tuberculosis clinic before he sat down to write his proverbs.

Of the patient who thinks he is cured; who goes back too soon to work at his old pace, and relapses? It is here that the attending physician has his greatest opportunity, and hence, his greatest responsibility. And I fear that it is in this situation that we most frequently fall short.

Truth is a great force. It never comes back to plague us, when we have practiced it. We are all tempted, when we have to inform a patient of a grave matter, to try to soften the facts by indefinite terms, by euphemisms, by speaking as though the matter were not so serious after all. The first impressions made upon a patient, when he faces for the first time the discovery that he has the disease, are of paramount importance. I have become convinced that the whole brutal truth should be communicated at the outset. It is rough at first, but it is kinder in the long run. If, after he has faced the initial jolt, he finds new items of bad news cropping up later, he feels that he is being kept in the dark; that he can't build on anything; and the effect on his morale is evil. If, on the other hand, he finds that things are no worse, not even so bad as he had expected, as he makes his necessary adaptations, his morale is correspondingly improved, and his confidence in his physician increased. This latter feature is important for him, as the doctor's power to help him is increased thereby. I have come to use a regular formula in replying to the patient's first question of how long it is going to take him to get well, namely—"A year for the cure, and two more years to clinch it—possibly longer."

It is necessary for the physician to have the cooperation of the patient, both in conduct and in morale. This cooperation is inevitably impaired, if the patient gets the idea that he has been deceived. When he finds, as he goes along, that the outlook becomes brighter, rather than more gloomy, even though he reflects that his physician has been over-pessimistic, his confidence is not impaired. Contentment makes him charitable; and *vice versa.*

It is very important that the patient be instructed in the natural history of his disease; in the manner in which healing is acomplished; in how recurrences are brought about. We should not assume that patients cannot be made to understand about this. I have never had reason to change an attitude adopted early in my professional life, namely, that every responsible patient is capable of understanding what it is necessary for him to know about his disease, that we have no right to ask of him intelligent cooperation, unless he has such knowledge; and that if we practice it, we can acquire the art of imparting such knowledge.

We may have to speak in parables, but it can be put over. It is here that I believe we fall short of our power to help more than anywhere else.

The outsider, the "butter-in" is a pest that we nearly always have to reckon with. If we see our patients regularly, and often enough; if they have been trained to consult before making the least change in their daily regime; if they make of each visit a confessional of everything that concerns them, we will be able to protect them to some extent. Generally they have to learn by being punished for indiscretions. Lucky are they if such punishment is not disastrous. Practically every patient treated at home has to suffer more or less from officious kinsfolk or friends. In tuberculosis it is not true that "in a multitude of counsellors there is safety." It is an occasion for martial law, not for democratic rule.

I wish to offer my tribute to that great center for the treatment of tuberculosis, Saranac Lake. It surpasses all other places,—not because of its climate, which is bad during the spring months, and in winter unsuited for asthenic patients; not on account of its medical personnel, for, admirable as that is, men just as able, just as idealistic, are found elsewhere; but on account of the morale of the place as a whole. In other resorts, the lungers are dumped down alongside a healthy population. In Saranac nearly the whole population is made up of lungers, or ex-lungers. Curing tuberculosis, and keeping it cured, is the business of the place. It is in the air. The patient gets a post-graduate instruction in individual hygiene, as applied to his disease, that is not to be obtained anywhere else that I know of. It partakes of the nature of a religious conversion. It is something for us to aim at in guiding our arrested cases, even though we know we must fall short.

A DISCUSSION OF SOME IMPORTANT FACTORS CONCERNING THE EIGHTH NERVE.*

By HARRY R. SLACK, Jr., Baltimore, Md.

This is rather a broad subject, and we shall not attempt in anyway to cover the entire field, but it gives an opportunity to draw your attention to some of the vital points in the matter of diagnosis. The treatment we shall not take up at all. Two or three interesting cases encountered recently emphasize the necessity for constant vigilance in connection with information furnished us by the eighth nerve. After discussing these briefly, I shall show some lantern slides, which, I think, will prove of interest to this group.

The first case is that of a woman, 33 years of age, coming in because of tinnitus, and slight deafness in the right ear. There was no history of any ear trouble in early life, and no important factor in the case, other than the fact that the patient had some headache of increasing frequency and severity during the three or four weeks immediately preceding her first visit. The examination as regards the nose, throat and sinuses was absolutely negative. Both ear drums were perfectly normal in appearance, but the hearing on the right was definitely impaired for both air and bone conduction. Impairment for bone conduction was more marked. Weber's test was referred to the left. Both eustachian tubes were patent and easily inflated. There was no spontaneous nystagmus or past pointing error. On irrigating the right ear with cold water, it was discovered that the vestibular reaction was very markedly impaired. On the left it was perfectly normal. Examination of the eye grounds showed an unmistakable early choked disk on the right side. The patient was given a very thorough general medical work up, with completely negative results—Wassermann, blood chemistry and so forth. She was referred to Dr. Dandy with the suggestion that there was a probable lesion of the cerebellar pontine angle. After careful examination and a week's observation, he did an exploratory craniotomy and found a very definite acoustic nerve tumor, the smallest he had ever seen. The chief factors about this case are—the tinnitus, unilateral deafness, which was a nerve deafness in type, and the absence of vestibular response on the right side.

There are so many conditions that may produce symptoms involving the eighth nerve that we are sometimes prone not to give the matter as broad a consideration as it deserves. Dizziness and vertigo are so common in neurasthenic patients that they are very frequently passed up as of no importance.

I think probably one of the most frequently overlooked central nervous lesions in this field is syphilis. So often we will discover accidentally a slight nerve deafness, and unless the case is followed up, and vestibular tests,

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Wassermann and spinal puncture done, the diagnosis may be entirely missed.

Another case which illustrates some of the difficulties recently came under our observation—a man, 58 years of age, with a history of extreme dizziness increasing in severity over a period of eight years. He had no headache, although occasional disturbances in vision, but no symptoms referable to the sinuses or throat. I shall omit a detailed account of the examination, but simply give the results of his ear investigation. There was a slight spontaneous nystagmus to the left, very slight spontaneous pointing error to the left, but this was constant. Hearing perfectly normal in the right ear, impaired in the left ear, especially for the high tones, and the bone conduction was much more impaired than the air conduction. Irrigation of the right ear with cold water for eight seconds produced a rather marked response, nystagmus and pointing error. Irrigation of the left ear four seconds produced a very violent response. On turning the patient and stimulating the right semicircular canal, five turns produced above the average response. Stimulating the left, three turns produced a very violent response. Our conclusion was that the patient had a very definite irritative lesion involving both eighth nerves, but especially the left. The medical diagnosis was, finally, multivascular lesions in various parts of the brain. Of course, the prognosis was very poor.

Some of the simpler conditions that are at times rather important are foreign bodies in the auditory canal, such as inspissated hairs and desquamated epithelium, which give rise to coughing. I have seen three cases, supposed to have had tuberculosis, that were entirely cured by removal of impacted wax; and several attacks of vertigo have been relieved by removing two or three hairs from the drum.

Before going to the lantern slides, I wish to bring to your attention the League for the Hard of Hearing. I feel that we ought to in every way possible cooperate with the practical side of readjusting the deaf. I understand you have an organization of the League here in Richmond, in the Basement of the Y. M. C. A. Building, and there is a very extensive National Organization that accomplishes untold good in providing re-education and re-adjustment.

(Showed a number of lantern slides at this point).

I should like to give you a brief summary of the work which is being done in the otological laboratory at the Johns Hopkins University. This work has been done by Drs. Crowe, Guild, Hughson and Polvogt. In the first place, a great deal of pathological material has been accumulated during the last five years, and, thanks to the persistent interest of Dr. Guild, excellent sections of the temporal bone have been secured. A great many of these cases have had accurate audiograms made at various times before death. It is now a problem to correlate the pathological lesion with the picture of the hearing.

One of the most important factors coming of this particular phase seems to be a direct relation between the number of nerve fibres which enter the various turns of the cochlea and the acuity of hearing. A great many sections have been counted, and Dr. Polvogt has reported this work. Also, a very definite lesion for otosclerosis has been found.

On the experimental side in the Hunterian Laboratory, Dr. Crowe and Dr. Hughson are just finishing some very interesting observations on the cat. They exposed the oval window and opened the middle ear so that the entire contents can be seen and controlled. By means of platinum electrodes, one of which is placed somewhere in the distribution of the eighth nerve and one in any other place in the brain, sound can be transmitted to a distant room through a very powerful amplifier. From their observations, it is evident that sound produces some electrical change in the eighth nerve region.

The most conclusive evidence that it is a vital force, and not simply a chemical or physical reaction, is the fact that the minute the animal dies all transmission ceases entirely. It seems that the entire concept of the hearing and sound will have to be revised.

1100 *North Charles Street.*

AVERTIN ANAESTHESIA IN OTOLARYNGOLOGY.*

By FLETCHER D. WOODWARD, M. D., F. A. C. S.,
and
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The fear in the patient and sometimes actual pain during the surgical procedures of the otolaryngologist has often been justified be-

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cause of the uncertain methods of producing anaesthesia. However, it is not the purpose of this paper to condemn any type of anaesthesia, but rather to present a brief summary of the literature, combined with our experiences with the new rectal anaesthetic commercially known as avertin, or E-107, and chemically labelled as tribrom-ethyl alcohol.

Local anaesthesia, i. e., topical, infiltration and block is indispensable to the rhinologist in some of his work, though its extensive use is probably due to its margin of safety and simplicity of administration.

Anaesthesia by the inhalation method has a definite place, but its use is somewhat limited in our field of work. In operations about the face, the field is at best restricted and, when an inhalation anaesthetic is to be given, the gas mask or ether cone and the anaesthetist practically crowd the surgeon out. Gases irritate the mucosa, causing excessive secretion and vascularity. The inflammable properties of most of the inhaled anaesthetics prevent their use if a cautery is to be employed. Inhaled anaesthetics are certainly not the anaesthetics of choice in inflammatory conditions of the respiratory tract as is often the case with our patients.

The first attempt at rectal anaesthesia was made in 1846 by Roux, with an aqueous solution of ether. In 1847 Pirogoff tried ether vapor; however, neither method was successful.

In 1913, Gwathmey's ether-in-oil anaesthesia, with or without the supplementation of the hypodermic of magnesium sulphate, had its ardent supporters, but has never been entirely satisfactory. This preparation frequently caused irritation of the rectal mucosa, with tenesmus, diarrhea, and ulcerations.

The few above enumerated facts combined with the fear and anxiety in the patient, of the anaesthetic and operation, has made us very eager for a more ideal anaesthesia.

During the year 1923 Willstatter and Duisberg produced tribrom-ethyl alchol (avertin) by the action of yeast on bromal. A short time thereafter Eicholtz demonstrated its pharmacological properties. The first clinical application was demonstrated by Butzengeiger in March, 1926. In 1928, Dr. J. C. Beck performed the first surgical operation under this anaesthetic on this continent. Following the initial clinical application of tribrom-ethyl alcohol as a rectal anaesthetic, numerous experimental and practical applications were carried out, both rectally and intravenously. The latter has been discarded entirely and it is only used as a rectal anaesthetic.

Avertin is a non-inflammable, odorless, white crystalline substance, having a melting point of 80° C., and is soluble in water at 37° C. up to 3 per cent. Solution occurs very slowly, requiring approximately forty-five minutes with vigorous shaking to dissolve. Each solution had to be prepared freshly, which offered a great handicap. It is now issued, dissolved in amylene hydrate, 1 gram to 1 c.c., which is readily soluble in water at 37° C., and labelled avertin fluid. In aqueous solution it is decomposed by heating above 45° C. into hydrobromic acid and dibromacetaldehyde; the latter is extremely irritating to the intestinal mucosa and may even cause ulceration. The presence of this undesirable decomposition is detected by adding a few drops of a 1 to 1,000 neutral congo-red solution to a few cubic centimeters of the freshly prepared solution immediately before its administration. The formation of a blue or violet color indicates that decomposition has taken place and the solution must be discarded, but the presence of a clear orange-red color indicates that the solution is free of impurities.

From the above statements, one would conclude that the margin is small for a proper mixture, but decomposition does not take place so readily as supposed. In our work while making the essential pre-administrative congo-red test, the test tube with the solution was placed in a rack for observation. The rack was put in a moderately illuminated spot at room temperature and watched daily for color changes. We observed twenty different solutions and no change in color was noted before ninety hours and many failed to get the purplish hue until eight days had elapsed. The average color change occurred in six and one-half days.

Avertin is absorbed by the intestinal mucosa very readily. Straub found that 80 per cent was absorbed during the first twenty minutes, and that 95 per cent was absorbed during the first two hours. He also states that the drug is more rapidly absorbed than the water in which it is dissolved. According to Sebening, during anaesthesia it is in a concentration of from 6 to 8 mgs. per cent in the blood.

Avertin is detoxicated during its passage through the body by a combination with glycuronic acid and is excreted in the urine as

urobromalic acid. It is excreted almost entirely by the kidneys, but traces have been found in the expired air and perspiration. Straub recovered 81 per cent from the urine of animals during the first forty-eight hours; whereas, Parsons recovered 72 per cent in humans during the same period. Traces of avertin have been found in the urine of animals sixteen days after its administration, but for only six days in humans. He also states that he has recovered from the urine 98 per cent of the total amount given. Therefore, it seems very unlikely that any appreciable amount is eliminated by any channel other than the kidneys.

The lethal dose is about 0.5 grams per kilo body weight: whereas, the anaesthetic dose is in the neighborhood of 0.12 grams per kilo body weight, thus giving a therapeutic index of approximately four.

Avertin resembles chloroform in its action on the heart. However, the effects produced by chloroform in a dilution of 1 in 20,000 are not produced by avertin until a concentration of one in 1,250 is reached, which means that chloroform is about sixteen times as toxic as avertin upon the cardiac musculature. The pulse rate is a little decreased during the anaesthesia, but there is no change in the quality. The systolic blood pressure usually drops from 10 to 30 millimeters of mercury immediately after the patient becomes anaesthetized, and at times the pressure may drop even lower. This initial fall is usually restored simultaneously with the beginning of the operation. One of our cases had a drop in the systolic pressure of 70 millimeters of mercury two hours after the induction of avertin, but his pressure responded nicely to ephedrine given hypodermically. Another case, with hypotension had the systolic pressure to fall so low that we were unable to estimate the pressure. She responded immediately to adrenalin and ephedrine given hypodermically and there was no further lowering of her blood pressure during the anaesthesia.

There are several reported cases in which the blood pressure has dropped 100 millimeters of mercury or more. One case was that of hypothyroidism. Hypothyroid cases do not seem able to detoxicate the drug very rapidly.

The respiration is slower, yet the efficiency is maintained by the increase in tidal excursions. Cyanosis rarely occurs, unless there is obstruction, such as the tongue falling back, due to relaxation. This can be corrected by pulling the chin forward or inserting an airway. We had one case to become cyanotic because of blood running down the nasopharynx during an intra-nasal operation without sufficient post-nasal plugging. His color promptly returned after aspirating the blood. The respiration can be increased by the usual stimulants, such as carbon dioxide and oxygen mixture and caffeine. Parsons claims that the slowing of the respiration is mainly due to a diminution of a voluntary movement and to absence of reflex activity from the respiratory tract, because, after a normal dose of avertin, the respiratory center retains all of its reflex effects and responses to drugs. However, toxic doses caused death by respiratory paralysis.

According to Burger, Bourne, and Dryer, avertin has very little action upon the liver function but produces some temporary kidney depression. No change has been noted in the parenchyma of any of the organs, even though subjected to repeated doses over a period of weeks. Artificial administration of glycuronic acid is of no benefit, since detoxication is a function of the liver parenchyma.

Avertin is recommended as a basal anaesthetic, to be supplemented by a general or local —such as the supplementation with a local application of cocaine and adrenalin or the infiltration about the primary incision with novocaine-adrenalin solution is usually sufficient, and even desirable, as a local hemostatic.

In our series we have obtained surgical anaesthesia in 70 per cent of the cases. Often the patient would be very restless and sometimes become noisy. On three occasions the patient talked during the entire operation, but did not recall any of the conversation or surgical procedures. Another patient began singing ten minutes after the administration of the anaesthetic and continued for about two and a half hours. Noisy or restless post-operative reactions have occurred in 10 per cent of the cases. This is combated by pantopon hypodermically.

The preparation of the patient consists in giving an enema and a mild hypnotic the night before so as to obtain a night's sleep previous to the operation, but this is not essential. A hypodermic of morphine with hyoscine or atropine is usually given thirty minutes before administering the drug, although the hypodermic may be eliminated, as is sometimes desirable, because morphine is a respiratory depressant. We have used the pre-operative

hypodermic in the majority of our cases, and prefer 1/6 grain of morphine sulphate and 1/150 grain of atropine for adults.

Some advocate giving the avertin in the patient's room; whereas, others claim just as good results when it is given in the operating room. We have given practically all of ours in the operating room, as this enables us to keep in one place all the apparatus necessary for administering the drug. The dose varies from 60 to 150 mgs. per kilo body weight, depending upon the individual. Children, robust individuals and hyperthyroid cases tolerate, or rather require, a larger dose than old dehydrated or obese patients. We have used doses varying from 60 to 110 mgs. per kilo body weight.

The drug is dissolved in distilled water between 35° and 40° C. so as to make a 2½ per cent solution, which is calculated from the dosage table. Just prior to injection, the preparation is tested with the neutral congo-red indicator for impurities. If the temperature is below 35° C., the avertin is precipitated out and is not absorbed. The mixture being free from impurities, it is allowed to flow by gravity into the large bowel by way of a small funnel and tube. We use a No. 18 French catheter. The patient is placed on his left side during the administration of the drug, which requires about three minutes. The buttock is strapped with adhesive to prevent expulsion of the avertin.

Amnesia ensues in three to ten minutes after administration of the drug, but the maximum anaesthesia is not obtained for approximately twenty-five minutes. The maximum effect is retained for from one to one and one-half hours, after which the patient has complete amnesia for four to ten hours, usually around six. The patient must be watched rather carefully during this period to prevent respiratory embarrassment which may be caused by relaxation of the tongue and jaw or smothering in the pillow. He usually awakens and asks for water.

There are very few post-operative complications reported. There seldom follow nausea and vomiting or complications of the bowel. Pneumonia and bronchitis are rare. We have had two patients that required catheterization one time each. Nausea and vomiting were noted in two cases, although both were of a mild degree. In one case a rash occurred on the third day after operation, which simulated a drug rash.

Our series, totaling sixty-five cases, consisted of the following operations, namely:

a. Twelve Radical Maxillaries—Five bilateral and seven unilateral. Three were supplemented with a little ether and three had the primary incision infiltrated with novocaine and adrenalin solution.

b. Four Radical Frontals—Each was supplemented with infiltration at the site of the primary incision with novocaine and adrenalin solution and the nasal mucous membranes shrunk with cocaine and adrenalin.

c. Five Tonsillectomies and Adenoidectomies—One was supplemented with chloroform as a large portion of the drug was expelled soon after injection.

d. Six esophagoscopies—Two for removal of foreign bodies and one for the passage of a bougie through an esophageal stricture which we had previously been unable to permeate. Three were diagnostic.

e. Nine Bronchoscopies—Three had lipiodol injections following examination without any complications. Two were for removal of foreign bodies and the others were diagnostic.

f. Fourteen Mastoidectomies—Seven were supplemented with a very small amount of gas.

g. Fifteen miscellaneous operations about the nose and throat, which consisted of intranasal sinus work, submucous resections, dilatation of laryngeal strictures, etc.

The oldest case was sixty-eight years, and the youngest eleven months.

In our experience we have obtained very gratifying results, particularly in the radical sinus work, bronchoscopies, and esophagoscopies. There is a certain amount of danger associated with tonsillectomies and intra-nasal work because of hemorrhage obstructing respiration; however, the proper precaution of post-nasal plugging and continued aspiration of the blood will practically eliminate this danger.

There are a few contraindications for the use of avertin, namely, severe renal or hepatic involvement; nevertheless, the drug has been used in some cases with marked icterus without untoward results. We have used it on one patient who had only one kidney, without apparent renal damage. Inflammatory and ulcerated conditions of the rectum and colon are definite contraindications. Acidosis is usually listed as a contraindication, but there are many

cases reported of marked diabetes in which avertin has been used successfully. We have used avertin in one such case. In hypothyroid cases a very small dose should be used, as the drug is eliminated slowly from such patients. In hypotensive cases the blood pressure must be watched very carefully. Avertin should never be the anaesthetic of choice for phrenicotomies, as Killian has shown in rabbits that respiration decreased 25 per cent after division of one phrenic nerve and 50 per cent after both were cut. Several other contraindications, such as cachexia, marked blood diseases and tuberculosis were formerly listed, but it is apparently the consensus of opinion of those familiar with avertin that the margin of safety is greater with this drug than any other anaesthetic. It is twice as safe as ether, and five times safer than chloroform or spinal anaesthesia.

Avertin is yet a relatively new anaesthetic, but its practicability has been sufficiently demonstrated to say that it is the anaesthesia of choice in highly nervous individuals, particularly if they have had repeated anaesthetics. It has been used extensively in surgery of the head, face and neck, and is highly recommended in hyperthyroid cases. In the latter cases the elimination is more rapid than usual and the dose must be necessarily increased. There are cases reported in which it has been used in tetanus to prevent convulsions; however, it has no curative power. It has been administered in light doses to patients for demonstrations before large clinics, and to small children before taking X-ray pictures. Unruly mental cases have been quieted with it and drug addicts have been carried through the crucial stage without the administration of any of the drug to which they were addicted.

Conclusions

1. Avertin anaesthesia can be used to a considerable advantage in bronchoscopies, esophagoscopies, and radical sinus work.
2. With a few exceptions, avertin is a suitable anaesthetic in patients with chest conditions which are endangered by inhalation anaesthetics.
3. There have been no manifestations of rectal or colonic complications.
4. Approximately one-third of the cases required an additional anaesthetic.
5. Patients must be watched during the period of amnesia following the operation.
6. Avertin should be used with the idea of supplementing if necessary.

Bibliography

1. Butzengeiger: *Deutsche Med. Wochenschrift*, 17:712, 1927.
2. Eicholtz: *Deutsche Med. Wochenschrift*, 17: 710, 1927.
3. Straub: *Munchener Med. Wochenschrift*, 14: 595, 1928.
4. Killian, Hans: *Current Res. Anæsth. and Anal.*, 8:24, 1929.
5. Parsons, F. B.: *Brit. Med. Jour.*, 11:709, 1929.
6. Blomfield and Shipman: *Lancet*, 1:546, 1929.
7. Edwards, George: *Current Res. Anæsth. and Anal.*, 9:119, 1930.
8. Guttman, J R.: *Current Res. Anæsth. and Anal.*, 9:279, 1930.
9. Spendel, Francis G.: *Current Res. Anæsth. and Anal.*, 9:285, 1930.
10. Reed, Charles B.: *Am. Jour. of Surg*, 9:76, 1930.
11. Lederes, Francis L.: *Am. Jour. of Surg.*, 9:78, 1930.
12. Young, James: *Lancet*, 1:1177, 1930.
13. Looper, Edward H.: Read at S. M. A.—To be published.
14. Lundy, J. S.: Pro. Staff Meetings of the Mayo Clinic, 4:370, 1929.
15. Bourne, Burger, and Dryer: *Am. Jour. of Surg.*, 9:82, 1930.
16. Bourne, Burger, and Dryer: *Can. Med Assn. Jour.*, 24:384, 1931.

A STUDY OF THE CIRCULATORY SYSTEM OF 150 ADOLESCENT GIRLS, PARTICIPANTS IN OR CANDIDATES FOR COMPETITIVE ATHLETIC SPORTS.*

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Introduction

Modern medical practice is essentially different from that in vogue during the latter years of the past century. Now emphasis is placed on preventive medicine; no longer does medical science apply itself largely with the care of the individual overcome with disease. In fact, today when sickness or disability occurs, it is not considered as something to be expected, but rather in many instances as a reflection upon the individual himself, his previous medical advisor, or on the general intelligence of his community. To live up to these standards general mortality statistics must be surveyed, morbidity rates compared and the exciting and predisposing causes of disease accurately known. During the last fifty years one by one the life cycle of organisms attacking humans has been revealed, with intelligent remedial means applied. The industries have instituted measures for pro-

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tecting workmen from dust and other activating agents of disease, but it has been only within the past decade that closely applied effort has been made to locate predisposing factors in the physical makeup of the individual with consequent suggested readjustments to physical and mental strain. The medical histories of the World War contain complete data concerning the general physical potentialities of the young male adult of our country. It is of interest to note that prior to December, 1917, 3,764,000 men were sent to camp from civil life, of whom 550,000 were rejected because of defects, of which 11.5 per cent were cardiac, while other circulatory defects brought the percentage to 15.[1] These revelations cannot be too often reiterated. As a result of the revealed data there is a general awakening; we see organized, national associations for prevention of heart disease, and also we hear the slogan "Have a health examination on your birthday." This latter takes admirable care of the individual who is fully matured and who fully sees the rationale of this maneuver. The child is amply taken care of by the intelligent parent, but what of the adolescent who is going through a period of rapid growth and development and meanwhile gaining self-assertiveness which often precludes the parents taking him for a health examination? And further, what about groups of adolescents who are engaging in competitive sports in our secondary schools? Our Government is keenly alive to the necessity of careful physical surveys when one applies for entrance to the Aviation Corps or other branches. Colleges make adequate physical examinations of their athletes, but it is my belief that municipal governments as a rule fail to furnish sufficient personnel in the medical inspection departments to make the proper estimation of the physical condition of the high school athlete. It is obvious that from the natural recuperative power of youth the stress and strain incident to striving to win in competitive games might only reveal itself in adult life. If there has been a lack of proper examinations of the prospective male athlete, the other sex has suffered even more from inattention. The pendulum has swung far from the type of adolescent girl who graced the Victorian era. Her outdoor athletic pursuits consisted of engaging in such games as croquet and possibly tennis, while in the gymnasium her physical development depended on wand drills and other exercise consistent with the clothing and behaviour demanded by that highly respected but changeable quality "good taste." Now we note daily in the press the performances of girls in competition on the track, in the pool, or on the field, where their records approximate those made by the male. The girl in competitive games is encouraged and she is gaining a place of prominence.

A search of the literature fails to reveal but few studies of groups of girls engaging in athletic sports. It may be all too new. However, it is of interest to note that there is published an article[2] showing that there is a part of the world where the girl in her attitude toward athletics apparently is not far different from the Mid-Victorian girl. A plea in this article is made for further participation in exercise, and through biological comparison shows that there is no fundamental reason for woman's supposedly physical inferiority. This comes from India with an added plea for more frequent physical examinations of girls in colleges, and the succinct statement that "a weak girl should not waste vitality and energy in over-exercise."

Mortality statistics[3] in the United States show that disease of the heart leads all other causes of death. Disease of the blood vessels is third in order of frequency. Knowledge of the foregoing in part led me to choose the cardiovascular system for applied study. Surely this system requires the closest observation and its integrity is fundamental to the athlete.

For a number of years it has been my opportunity to make an estimate of the physical condition of both young men and young women who are candidates for athletic work. Anthropometric measurements have been made and the individual has been studied with a view to the gaining of knowledge as to his physical potentialities, but heretofore no attempt has been made to record or to correlate my findings in special groups. My thought in the selection of girls in secondary schools who are candidates for or participants in such competitive athletics as tennis, swimming, hockey and basket ball was not only to obtain data so that those not physically fit might be eliminated, but to afford a stimulus for more careful survey of the material which presents itself in our secondary schools for indulgence

in these sports. It is unfortunate but true that the connotation "athletic type girl" has been made to include the girl who enters into competitive sports regardless of her physical fitness. Thus we have in an article by Domez, Dawson, Mathis and Murray[4] in the *Journal of the American Medical Association*, May 8, 1926, the title of which is "Cardio-vascular Reaction in Athletic and Non-Athletic," this statement: "To be sure, a good physique is as a *rule* associated with athletic activities either as cause or effect or both, but this is not necessarily the case, and it may be that some of the girls whom we have designated athletic were *physically below par* . . ." This cites an unfortunate trend and shows a promising field for preventive medicine. Through some channel the young man or young woman who is physically defective should be eliminated from any participation in competitive sports by the school authorities. Let the term "athletic girl" then be synonymous with "good physical condition."

Discussion

One hundred and fifty girls, candidates for or participants in competitive swimming, hockey, tennis and basket ball, were available for study. One hundred thirty-one attended public high school; nineteen were pupils in a private preparatory school.

It was realized that it would be necessary first of all to select the type of data that could be used most advantageously. The following outlines my selection. In subsequent paragraphs will be set forth the reasons for this choice:

1. *General Nutrition:* Height-weight-age ratio.

2. *Functional Tests:* Heart rate standing, the pulse rate immediately after twenty-five hops on each foot at rate of one hop per second; pulse rate immediately following three-minute rest, and finally the blood pressure, systolic and diastolic, estimated with mercury sphygmomanometer.

3. *General Clinical Observations Pertinent to the Circulatory System:*

(a) Quality of heart sounds, their relative intensity.

(b) Any detectable arrhythmia.

(c) Presence of adventitious sounds with their route of transmission.

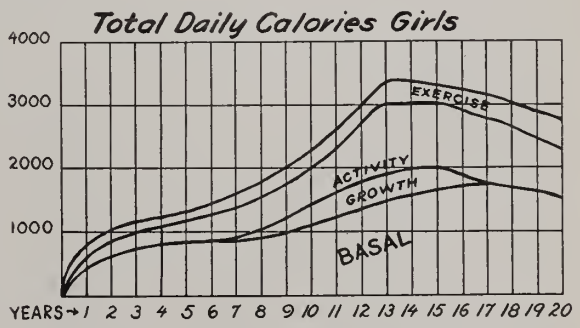
(d) Condition of the wall of the radial artery.

(e) Miscellaneous data, including such items as sweating hands, tremor, dermatographia, enlargement of thyroid, etc.

4. *Results Obtained by Use of Electrocardiograph, Roentgen Ray and Basal Metabolism Machine in Selected Cases.*

1. General Nutrition

Of fundamental importance to a properly functioning cardiovascular system, as well as to any other system in the adolescent, is the state of nutrition. It might well be reasoned *a priori* that a malnourished growing girl cannot possess a circulatory apparatus worthy of indulgence in competitive athletics. The adolescents' caloric intake is expended for his basal needs, his growth, his energy requirements and finally in the inevitable wastage. At this stage of life his requirements for energy are unusually large and it can readily be seen that if there is an imbalance in the expenditure for energy with the intake, it must be at the expense of growth or even his very basal needs. The amount of loss in excreta remains quite constant. Holt,[5] in his book, "Good Health and Growth," states that "it is a common observation and undoubtedly a true one that during adolescence the average boy or girl takes more food than the average adult man or woman." Below is a graph taken from Holt:



A comparison was made between the height-weight-age ratio of the individual with figures in the table prepared by Baldwin, T. Bird and Thomas D. Wood.[6] A variation of 10 per cent was deemed of sufficient importance to record the individual as being of abnormal weight. Of 131 girls from the high school twenty-four or 18.3 per cent were overweight, and thirty-one or 23.6 per cent were underweight. In the private school group, of the nineteen girls, four or 21.05 per cent were overweight, and seven or 36.8 per cent were underweight.

2. Functional Tests

The literature is particularly fertile in material relating to functional tests for physical efficiency. It might be well first of all to outline basic physiological facts culled from the work of scientists, from which the rationale of the tests is derived.

Bowen[7] in the *American Journal of Physiology*, 1904, appears to have been the first to systematically investigate changes in pulse rate actually occurring during muscular work. From his observations he concludes that there is a sudden rise in pulse rate at the beginning of exercise, followed by a more gradual secondary rise. The secondary rise continues until end of work. It then ceases, the pulse rate falling suddenly and rapidly. This in turn is followed by a slower secondary fall.

Bainbridge[8] states, speaking broadly, "The acceleration of the pulse for a given intensity of muscular exertion varies inversely with the contractile power of the heart. As the limits of exertion are reached, however, this difference between the trained and the untrained tends to disappear. During heavy muscular work the venous inflow to the heart must be so large that every heart dilates almost to its full size during diastole and its output per minute then becomes directly proportional to its pulse rate."

Pembrey[9] is quoted as follows: "The limit of efficiency as regards the heart beat appears to be reached at 160 per minute, but doubtless there are individual differences."

Flack and Bowdler,[10] from a study of reactions following stepping on and off of chair five times in fifteen seconds, conclude that heart rate in healthy subjects should not increase more than twenty-five beats and should return to normal in thirty seconds.

The following observations on blood pressure in its relation to exercise are of interest:

Rosen and White[11] in the *American Journal of Physiology* state that "pulse pressure is directly proportional to stroke volume under conditions that have essentially the same diastolic pressure and pulse rate."

Krogh and Lindhard[12] give something which tends to show the difference between the trained and the untrained in physiological response to exercise. It supports Bainbridge. They state that "increased minute volume of the heart necessary in performing increased work is obtained to a much greater extent by increasing output per beat and to much smaller extent by acceleration of the pulse in the trained, more than in the untrained."

Ernest Boos[13] adds: "An increased output of the heart by increasing the elastic distention of the wall of the aorta will elevate systolic blood pressure. The diastolic pressure remains unchanged unless there is alteration of the peripheral resistance, either after exercise or with presence of exophthalmic goiter."

As a resultant of a survey of these facts, it would seem desirable, first, to estimate the pulse rate, then, after giving the heart muscle a definite load, noting again the pulse, and later recording the rate after a rest period. The estimation of the blood pressure, systolic and diastolic, would have a definite role.

The most serious attempt to give a measured load to the heart with estimation of pulse rate and blood pressure reaction that could be located in the literature is by Gillespie, Gibson and Murray.[14] They used a convertible ergometer giving a load up to five kilograms and also a metronome for accurately recording rate of movement. Their work is significant in confirming what is stated above on the effect of training on repeated performance of definite work. They found the pulse tended to be slower after frequent reptition of same work at few days interval. It should be noted that their estimation of pulse rate was made while the work was actually being accomplished.

E. C. Schneider,[15] to eliminate the personal equation and to give a practical method of grading aviators for physical fitness, rates numerically the response to six observations:

(1) Pulse rate reclining.

(2) Pulse rate increase on standing.

(3) Standing pulse rate.

(4) Pulse rate increase immediately after exercise.

(5) Return of pulse rate to standing normal after exercise.

(6) Systolic pressure standing, compared with reclining.

He assigns points arbitrarily for the various responses.

Crampton[16] expresses our belief concerning Schneider's work when he says, "To make a scale of six different tests and to adjust them to each other . . . is perhaps more ambitious than some of us care to essay." Then, too, as others have pointed out, sources of error would occur in the underestimation of the efficiency of an individual with a rapid heart due to psychic disturbance incident to

examination and the giving of a too high rating to bradycardias.

Bloedorn,[17] in an article in the *American Journal of Medical Science*, outlines a method used in estimating cardio-vascular efficiency in the Navy:

(1) Listening to heart.

(2) Twenty hops each foot (rate one per second).

(3) Blood pressure and pulse rate immediately before and after.

The plan of procedure employed herein will be seen not greatly dissimilar to this. More elaborate tests were not thought practical and it is believed would not have had greater value. A survey of the results given on pages i to v of appendix will show first of all that to an extent, probably on account of emotional impulses, the initial rate was often considerably higher than the rate after the rest. Effort was made to combat the psychical element by having the subjects enter the examining room one at a time in so far as possible. Another factor tending toward a more rapid initial rate was the taking of the initial pulse rate while standing. The rate after rest was taken while sitting. Under these conditions, the failure of pulse to assume the pre-exercise rate is the more notable. Those showing a constant rate of 100 or above were arbitrarily placed in a tachycardia grouping. In this class there were found forty-three or 32.8 per cent among the high schools girls, and seven or 36.8 per cent among the private school girls. Twenty-two or 16.7 per cent in the high school and four or 21.05 per cent in the private school showed an increase after exercise of twenty beats, with a failure to return to pre-exercise rate after three minutes. There was but one outstanding case of bradycardia. Here the rates, 56-88-60, warrant this designation. (See Case No. 62.) Those having a combination of elevated systolic blood pressure with tachycardia:

Fourteen or 10.6 per cent in the high school group.

Those having lowered systolic blood pressure:

Thirty-seven or 28.2 per cent in the high school.

Nine or 47.3 per cent in the private school.

I considered a systolic pressure of 125 mm. or above elevated while a blood pressure of 100 mm. or below as low. I quote the following as basis for establishment of these standards:

Dearborn[18] found an average systolic blood pressure in sixty-eight trained females, whose average age was 25.2 years, 114.1 mm.; while 147 untrained women whose average age was 19.8 years averaged 107.9 mm. systolic. He gives a rule which he states in no way is absolute, that from age of ten for the next twenty years each year represents a rise of 1 mm. of Hg.

In Table 43, the Association of Life Insurance Medical Directors and the Actuarial Society of America, published in 1925, there is seen among 1,025 female entrants for insurance under age of eighteen years, an average systolic blood pressure of 114.7 mm., average diastolic 75.8 mm., giving average pulse pressure of 38.9 mm.

The average systolic pressure for the entire group of 150 individuals in my study is 110.4 mm., with an average diastolic pressure of 67.4 mm., giving an average pulse pressure of 43. mm.

3. General Clinical Observations

These observations were recorded with a view to lending assistance through correlation in ascertaining the competency of the heart. Then, too, there was a desire to record for statistical value certain findings. A loud sudden first sound, a split first sound, or, as was noted in this study, *a roughened or impure first sound*, are always of interest to the clinician. The latter was noted in seven instances, all of these exhibiting a variance from the clear booming muscle sound normally heard. The relative intensity of the second sounds at the base is of undisputed value. As isolated findings, sixty-two showed a greater second pulmonic, in seventy instances the second aortic was definitely accentuated, while in eighteen instances the second pulmonic was noted as equalling the aortic sound. Extreme care was utilized to avoid error in instances of the sounds approximating each other in intensity. If there was any doubt, the sounds were recorded as equal. Not as isolated phenomena, however, but in their correlation with each other and other findings are these heart sounds of most value.

Arrhythmias in this series were of three types: first, that type which is characterized by an acceleration of rate with inspiration with a subsequent slowing during expiration (sinus arrhythmia), sixteen hearts exhibiting this; the second type was that in which there was found a "dropped beat," (extra systole).

In three instances this was recorded. One heart showed acceleration of rate without reference to respiratory cycle (seemingly a form of paroxysmal tachycardia).

In consideration of intra- and extra-cardiac adventitious sounds (murmurs), we have again interesting data. No argument is necessary for their incorporation, but we should realize how much less emphasis is now placed on murmurs than formerly. Even though the murmur may be shown by other studies to represent organic changes at a valve orifice, a competent myocardium offsets this. Murmurs heard at the base, particularly over the pulmonic area, have long been considered largely functional, but it remained for Lewis A. Conner[19] in an article on cardiac diagnosis to express the modern trend when he states that .9 of all apical murmurs are accidental. Twenty-seven or 18 per cent exhibited a systolic murmur over the pulmonic area alone and untransmitted. In five instances, or 3.3 per cent, there was a systolic murmur over the pulmonic area with a concomitant systolic murmur over aortic area with apparent transmission to the vessels of the neck. In two instances there were systolic murmurs heard over the aortic areas alone. A frank apical murmur systolic in time was found in one instance; this seemed untransmitted.

The quality of the radial wall is particularly worthy of recording. Adolescence is not the period of life associated with atheromatous changes. When early changes are suspected at this period, they are of much significance. A wall palpable after shutting off the blood stream is recorded herein as "one plus." For an artery which was with difficulty obliterated with an outstanding wall, the designation "two plus" was pre-determined. There were no cases in the latter category. In twelve instances the arteries were noted as "one plus."

There is a type of data which, although not derived from direct examination of the circulatory system, has such bearing on estimating the extent of functional derangements that no study is complete without giving space for its recording. We refer to excessive sweating, especially of extremities, cyanosis hands, tremor, dermatographia, enlarged thyroid and exophthalmos. These phenomena of greater or less extent were found in ten instances. Again, as isolated phenomena these findings do not bear a comparable importance to their value in association with other findings.

4. Results Obtained by Use of Electrocardiograph, Etc.

As much as it would seem desirable, it was impractical to employ the basal metabolism apparatus, the X-ray and the electrocardiograph in all of these examinations. It was realized that nothing could be more valuable than the testing of inferences made from a general clinical survey using the means available to the average clinician against the results obtained by the use of these instruments of precision. The accumulative results from an entire special group would have no little value. In the premises our problem then was to use these adjunctive methods to the best advantage in a limited range. The procedure was to carefully survey the information that had been obtained through other methods and then in those cases where confirmatory evidence seemed most desirable, and full cooperation could be obtained, these special instruments were employed. The basal metabolism rate was estimated in seven cases. Six were radiographed and also from these same pupils electrocardiographic tracings were obtained. These data are on pages vi to xxiv in the appendix.

Correlation and Evaluation of Data

In a systematic survey of the material amassed in this study the following plan was adopted: To consider

(1) The nutrition findings in relation to heart rate and blood pressure.

(2) Tachycardias in their relation to:
- (a) Functional Disorder of Heart
- (b) Hyperthyroidism
- (c) Myocardial disease.

(3) Bradycardias, arrhythmias, abnormalities of sound, murmurs, in their relation to organic disease:
- (a) Correclated electrocardiographic and X-ray studies.

(4) Murmurs Pulmonic area.

Nutrition Findings

In consideration of the general nutrition we must beware of the presence of two types of faddist; first, the one who insists that all, despite a racial or familial background, must conform to a certain standard, and secondly, the ubiquitous disciple of the cult who is preaching that all girls must for beauty and popularity acquire a boyish figure. The preachings of either extremist are pernicious

to their effect. In discussing previously the admissibility of evidence in a circulatory survey of facts concerning nutrition, we made certain statements which would lead to the conclusion that malnourished adolescents should be excluded from severe exercise. We maintain that such a conclusion is valid. Of the thirty-eight girls underweight, fourteen or 36.8 per cent were in the hypotension class while eleven or 28.9 per cent exhibited tachycardia. Of the twenty-eight girls overweight, three or 10.7 per cent were in the hypotension grouping while twelve or 42.8 per cent exhibited tachycardia. The tendency then was for the underweight girl to have low systolic pressure and the overweight girl to show tachycardia. Type breakfasts and luncheons and time for retiring recorded in the hypotension cases were somewhat illuminating but data were not extensive enough for proper inference. and then too we are concerned chiefly with objective findings in this study. There was one outstanding case of overweight, No. 132; her weight alone should preclude competitive athletics. Under thirty years, longevity records give preference to those slightly overweight rather than to those underweight. We believe the underweight girl needs rest and not excessive exercise, especially those with marked hypotension. Overweight *per se* should not be a cause for exclusion from athletics except in instances similar to the one cited above.

Relation of Tachycardia to Functional Disorder of Heart and Hyperthyroidism

The problem of determining whether or not the individual studied possesses a competent circulatory apparatus uninfluenced by neurogenic difficulties is indeed a task. Let us give attention to the tachycardias as a group and note excerpts from the literature. John Parkinson[20] in the *Canadian Medical Association Journal* writes that "simple tachycardia, unless there is an underlying cause directly affecting the myocardium, does not seem to lead to heart enlargement or indeed failure." We learn much also from Lewis A. Conner,[21] than whom no one had a more extensive experience in the evaluation of data from cardiac examinations during the World War, when he says, "The most common error committed by my assistants was the mistaking of functional disorder for serious heart disease."

In another trend, J. M. H. Campbell,[22] in a *Guy's Hospital Report*, makes the statement that a slow fall of pulse after exercise indicates bad training, effort syndrome or anemia following influenza or accompanying tuberculosis.

It would be well to ponder for a moment over these authoritative words gleaned from the literature. The difficulty in making a positive decision, from clinical data alone, as to the cause of a tachycardia, is apparent. The preponderance in numbers of the cases of functional disorders is striking. Considering them we cannot neglect the condition variously referred to in post war literature as "D. A. H." (disordered heart action), nervous heart, neurocirculatory asthenia, or effort syndrome. Prior to 1914 this type of heart would have been declared an indication of neurasthenia, hyperthyroidism or incipient tuberculosis. In fact, hyperthyroidism was staunchly put forth as a cause of D. A. H. by Harlow Brooks.[23] Inherited constitutional disability and infection were advanced by Sir Thomas Lewis[24] in his original description. The symptoms often described, in addition to tremor, tachycardia, cold sweating cyanosed hands, dermatographia, are shakiness, flushed face and giddiness. Of those showing tachycardia we find cases 46, 19, 53, 52, 47, 42, 36, 34 and 3 exhibiting one or more of such findings as enlarged thyroid, dermatographia, tremor sweating hands or exophthalmos; cases 31, 12 and 37 show gross structural faults: i. e., depressed sternum, asthenic build, and spinal deformities. Basal metabolism estimations were made on cases 12, 47, 3, 15, 49, 39 and 42. It was desired to make estimations on all of the nine cases of D. A. H. with evident concomitant signs of hyperthyroidism, especially cases 52 and 53; however, only the cooperation of cases 3, 47 and 42 of this group was obtained. Those on whom the test was made exhibited the following:

*Case No. 12:** There was a rapid heart rate, increased blood pressure, tremor and spinal deformity. It is to be noted that at time of test her pulse was noted as 72. B. M. R. was found to be minus 5 per cent, Hb. 80 per cent.

Case No. 47: Again there was tachycardia, elevated blood pressure, tremor, enlarged thyroid. At time of test pulse rate was 96. B. M. R. was shown to be plus 5 per cent; Hb. 80 per cent. (Contradictory to clinical evidence.)

*Ambitious to be an aviatrix.

FUNCTIONAL TESTS

Case No.	Age-Hgt.-Wgt.	Pulse Rate*	Blood Pressure	Heart Sounds	Murmurs	Rhythm	Remarks
1.	17-65-115	116-126-100	116/60	P2 greater		Extra-systole	
2.	16-69-133	148-132-88	130/84	A2 "		Paroxymal tachy	
3.	15-62-110	124-144-104	128/82	A2 "		Sinus arrhythmia	Dermatographia
4	12-63.7-107	128-128-108	116/56	A2 "			Enlarged glands in neck
5.	16-66-113	132-140-112	116/62	A2 "	Sys. over pulmonic		
6.	16-61-107	124-124-112	116/56	P2 "			
7.	17-65-126	112-140-104	130/76	A2 "			
8.	16-66-127	116-128-108	114/76	A2 "			
9.	17-66-123	116-132-108	122/74	A2 "	Sys. trans. to carotids		
10.	16-63-113	104-140-112	114/74	P2 "			
11.	15-65-140	140-136-104	130/58	A2 "			
12.	14-66-102	144-148-136	132/76	A2 "	Harsh sys. over Pulmonic	Extra systole	Tremor; scoliosis dorsal left. Some kyphosis
13.	16-62-162	100-116-108	116/64	P2 "			
14.	18-64-142	112-120-100	112/68	A2 "			Acne
15	14-62-103	148-160-88	120/62	A2 "		Sinus Arrhythmia	
16.	17-66-116	124-140-116	116/58	A2 "			One plus arteries
17.	16-63-129	108-124-100	116/74	A2 " (1st sound roughened)			
18.	16-65-125	104-128-104	104/66				
19	16-66-105	112-140-112	122/84	P2 greater	Sys. over apex		Cold, wet hands, Acne
20.	16-65-110	136-110-128	126/76	P2 "		Slight arrhythmia	Acne
21.	14- ? - ?	132-132-132	126/80				
22.	17-65-141	132-120-104	122/68	A2 "	Sys. over pulmonic	Sinus arrhythmia	
23.	15-66-120	128-132-100	100/56	A2 " (Impurity 1st sound)			
24.	15-60-113	116-128-100	114/78	P2 greater			
25	16-54-99	100-144-104	120/68	P2 "		Sinus arrhythmia	
26	15-67-139	104-108-100	112/62	A2 "			
27.	16-64-117	116-128-116	134/84	P2 "	Sys. over pulmonic		
28.	16-61-107	108-140-116	94/68	P2 "			
29.	17-62-133	112-128-104	110/70	P2 " (1st roughened)			
30	17-62-109	100-156-108	108/74	A2 greater		Sinus arrhythmia	Evident pulsation in interspace to left
31.	15-62-99	108-128-104	108/66	P2 "			Sternum depressed
32.	15-59-100	140-148-120	112/70	A2 equals P2			
33.	13-62-95	124-134-112	90/74	A2 "			
34.	15-48-94	120-160-128	138/68	P2 "	Sys. over pulmonic		Cold, wet hands Tremor
35.	15-64-140	100-116-108	104/60	A2 equals P2			
36.	15-66-134	140-140-124	148/94	P2 greater			Cyanosed, moist hands; tremor; acne, enlgd thyroid
37.	17-67-107	96-128-116	124/66	A2 "	Sys. over pulmonic aortic areas, trans. to carotids		Asthenic type
38.	14-64-115	100-124-100	106/60	P2 "			Enlarged glands
39.	14-61-109	128-144-112	136/74				
40.	15-58-95	108-128-100	94/64	A2 "			
41.	17-66 127	112-120-112	112/54	P2 "			
42	16-68¾-146	136-140-128					Tremor

*Before exercise, after exercise and after a 3-minute rest.

Case No.	Age-Hgt.-Wgt.	Pulse Rate*	Blood Pressure	Heart Sounds	Murmurs	Rhythm	Remarks
43	15-63-127	125-152-112	118/74	A2 "			
44.	16-64-123	108-128-100	94/58	A2 equals P2			
45.	17-62-110	108-120-100	114/28	P2 greater	Sys. over aortic area trans. to carotids		
46.	17-62-126	120-156-128	132/82	P2 "			Thyroid enldg. Dermatographia
47.	18-65-111½	136-140-116	132/76	P2 " Impurity 1st sound			Tremor. Enldg. thyroid
48.	15-63-132	120-148-108	104/72	A2 greater			
49.	14-63½-128¼	128-140-116	120/58	P2 "	Sys. over pulmonic		
50.	14-62-98	130-124-104	90/56	A2 "			Enlarged glands in neck
51.	17-64-125	126-120-112	104/62	P2 "			
52.	15-62-123	108-140-124	135/74	A2 "	Sys. over pulmonic		Perspiring hands
53.	16-62-127	152-168-140	114/78	P2 "			Enldg. thyroid. Tremor Dermatographia Sl. exopthalmos
54.	13-61-100	100-116-85	100/64	A2 equals P2			One plus arteries
55.	17-63-128	108-120-84	120/62	P2 greater	Sys. over pulmonic aortic areas, trans. to carotids		
56.	17-69-132	80-100-76	126/84	A2 "			One plus arteries
57.	13-63-128	100-116-76	116/66	P2 "			Thyroid slightly enldg.
58.	18-62-118	84- 92-84	104/68	A2 "			"Quick pulse"
59.	17-59-121	84-108-80	114/60	A2 "	Sys. over pulmonic and aortic areas, trans. to carotids		
60.	14-60-92	112-140-92	125/54	P2 "	Sys. over pulmonic	Sinus arrhythmia	
61.	16-59-95	116-124-92	134/66	A2 "	Sys. over pulmonic	"	Slight acne
62	17-60-141	56- 88-60	122/86	P2 " 1st sound roughened		Slight arrhythmia	
63	15-69-131	88-128-100	114/88	A2 greater			One plus arteries
64.	16-63-104	104-104-88	114/58	P2 "			Cold, sweating hands
65	14-64-116	108- 96-92	116/80	P2 greatly accentuated		Occ extra systole	Plus arteries
66.	16-65-117	104-120-96	112/54	A2 greater			Tendency toward dicrotism. (Cardiac)
67.	16-62-115	96-108-96	118/66	P2 "		Sinus arrhythmia	
68.	18-62-104	100-108-96	100/72	P2 "		Some arrhythmia	
69.	17-62-110	76-104-80	132/64	P2 "	Sys. over aortic trans. to vessels of neck		
70.	17-61-114	88-112-88	124/64	P2 "	Sys over aortic		
71.	12-55-75	96-132-120	106/60			Arrhythmia	One plus arteries
72.	16-63-92	88-108-96	108/64	A2 equals P2			One plus arteries
73.	17-67-135	76-112-88	120/78	A2 greater	Sys. over aortic		
74.	16-67-114	100-112-88	100/56	A2 "			One plus arteries
75.	14-62-115	72- 92-80	106/72	P2 " of different intensity.		Slight arrhythmia	
76	13-57-91	104-132-76	124/?	A2 greater	Sys. over pulmonic	Sinus arrhythmia	Appears anemic
77.	15-63-123	96-120-96	94/70	A2 "			
78.	15-62-104	104-132-80	94/68	P2 equals A2			
79.	15-62-106	112-128-88	94/52	P2 greater 1st roughened			Acne

*Before exercise, after exercise and after a 3-minute rest.

Case No.	Age-Hgt.-Wgt.	Pulse Rate*	Blood Pressure	Heart Sounds	Murmurs	Rhythm	Remarks
80.	17-65-113	80-100-96	96/62	A2 greater			Prominent scapulae; Anemic Enlgd. glands
81.	16-66-126	96-140-96	94/50	A2 "			
82.	16-64-125	96-108-88	88/65	P2 "			One plus arteries
83.	14-62-115	80-104-80	98/74	A2 "			
84.	17-67-116	76- 92-92	96/70	A2 "			
85.	16-63-112	92-128-96	94/64	A2 "			
86.	14-62-100	108-100-88	92/64	A2 "			
87.	16-62-98	80- 96-92	88/84	P2 "			
88.	18-64-106	96-120-88	86/?	P2 "			
89.	12-62-84	108-124-100	94/62	P2 "			Enlarged glands in neck
90.	17-62-115	72- 88-68	86/70	P2 "			
91.	15-61-147	88- 88-88	98/56	P2 "			
92.	16-66-108	80-112-88	84/58	P2 "			
93.	15-61-104	80-104-92	94/58	P2 equals A2			
94	15-63-111	84- 92-76	94/58	A2 " P2	Sys. over pulmonic		
95.	15-65-123	108-120-84	94/60	P2 greater			
96.	15-66-147	108- 91-100	94/68	P2 "			
97.	15-61-107	104-120-92	80/52	A2 "			
98.	16-61-108	104-132-88	96/72	P2 "			
99.	15-62-110	84- 92-72	94/60	A2 "			Fingernail biter
100.	14-64-93	100-136-88	92/66	A2 "		Sinus arrhythmia	
101.	15-64-119	88-104-84	96/60	A2 "			
102.	18-63-128	80-120-80	96/62	P2 "			One plus arteries
103	17-63-154	68-104-60	92/58	A2 "			
104.	16-61-112	76-104-76	98/64	A2 "			
105.	17-63-104	96-120-72	98/?	A2 equals P2			Bad posture.
106.	14-60-106	88-100-92	96/50	P2 greater			
107	16-62-99	92-104-88	96/64	P2 "			
108.	15-64-108	100-104-88	96/64	A2 equals P2			
109.	15-63-91	100-112-80	98/72	A2 greater			
110.	14-65-126	92-120-104	98/72	A2 "			
111.	15-62-113	80-100-68	80/56	A2 " 1st sound roughened			Appears anemic
112.	15-63-142	96-124-88	96/58	P2 greater			
113.	16-62-108	100- 96-80	98/74	P2 "			
114.	17-61-120	112-120-88	118/64	P2 "	Sys. over pulmonic		
115.	15-63-126	84-116-84	134/58	A2 equals P2	Sys. over pulmonic		
116.	17-59-112	100-128-84	116/72	A2 greater P2	Sys. over pulmonic		
117.	15-61-91	104-112 80	106/66	A2 "	Sys. over pulmonic		
118.	16-61-102	96-108-96	110/70	A2 "	Sys. over pulmonic		
119.	18-64 126	96-120-84	114/50	P2 "	Sys. over pulmonic	Sinus arrhythmia	
120	15-68-137	112-140-84	112/72	P2 equals A2	Sys. over pulmonic		
121.	17-62-117	112-104-80	114/72	A2 greater	Sys. over pulmonic		
122.	17-64-126	108-116-96	110/58	A2 "	Sys. over pulmonic		
123.	15 64-118	88-112-96	115/75	A2 "	Sys. over pulmonic		One plus arteries
124.	18-61-105	80- 85-72	114/62	A2 "	Sys. over pulmonic		
125.	17-67-136	108-108-96	112/76	A2 "	Sys. over pulmonic		
126.	17-63-119	108-120-96	134/90	A2 "	Sys. over pulmonic		
127.	17-64 123	72-124-76	116/64	P2 "	Sys. over pulmonic		
128.	15-61-118	104- 88-92	112/72	P2 "	Sys. over pulmonic		
129.	17-61-105	96- 88-88	106/56	A2 "	Sys. over pulmonic		
130.	17-64-145	110-116-84	126/87	P2 "			
131.	18-66-116	84-108 56	114/58	A2 "			
132.	18-60-150	80-116-88	124/76	P2 "			

*Before exercise, after exercise and after a 3-minute rest.

Case No.	Age-Hgt.-Wgt.	Pulse Rate*	Blood Pressure	Heart Sounds	Murmurs	Rhythm	Remarks
133.	16-65-96	108-108-96	112/76	A2 "	Sys. over pulmonic		
134.	17-63-105	84-100-96	112/88	A2 "			
135.	14-59-79	96-128-96	120/74	P2 "			
136.	17-66-213	76- 88-84	108/54	A2 "			
137.	15-64-153	96-120 96	112/86	A2 "			
138.	14-68-167	100-116-88	108/78	A2 "			
139.	16-66-110	88-104-80	106/76	P2 equals A2			
140.	15-65-154	96-140-92	124/76	P2 greater			
141.	17-63-149	104-116-76	124/66	P2 "			
142.	15-66-187	84-104-96	132/78	A2 equals P2			
143.	15-64-144	72-112-88	106/62	A2 greater			
144.	16-62-138	92-120-72	116/74	A2 "			
145.	16-65-107	84- 88-92	104/58	P2 "			One plus arteries
146	15-66 154	80- 84-72	104/68	A2 equals P2			
147	17-65-105	84-112-84	108/72	P2 greater			
148.	15-66-117	108- 88-80	108/56	A2 equals P2			
149.	15-62-91	96 120-96	134/64	A2 greater			
150.	17-64-111	100-108-72	112/86	P2 equals A2			

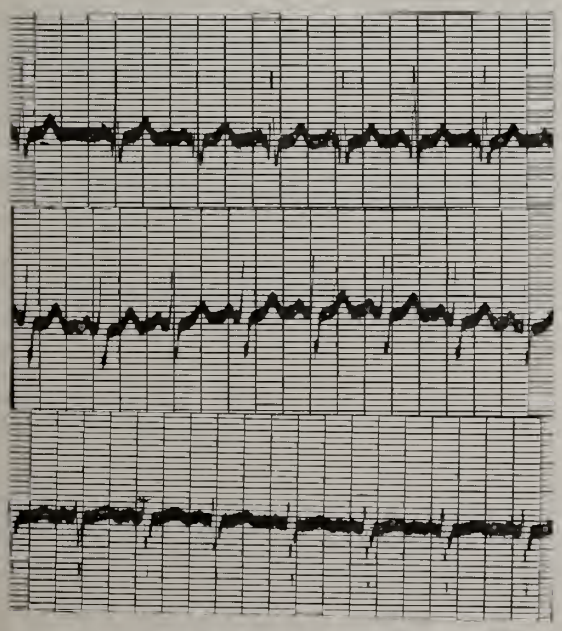
*Before exercise, after exercise and after a 3-minute rest.

Case No. 3: Tachycardia, increased blood pressure, dermatographia; pulse at time of test was 80; B. M. R. Plus 2 per cent; Hb. 82 per cent.

Case No. 15: Tachycardia (although at time of test rate was 76); B M. R. Minus 10 per cent; Hb. 88 per cent.

Case No. 49: Tachycardia, enlarged glands in neck, pulse at time of test 72; B. M. R. Plus 16 per cent; Hb. 90 per cent.

Case No. 39: Tachycardia, elevated systolic blood pressure (136/74); pulse at time of test 92; B. M. R. Plus 22 per cent; Hb. 85 per cent. See electrocardiograph appended.



Case No. 39.—February 6, 1929.
Rate: 110 auricular and ventricular. P. R. Int. .17.
Graphic Interpretation:
1. Axis minus 24°. Left axis deviation.
2. Sinus arrhythmia and simple paroxysmal tachycardia.

Case No. 42: Tachycardia; B. P. 132/66; tremor; pulse rate at time of test 96; B. M. R. Plus 17 per cent; Hb. 85 per cent.

Full details of these estimations, which were performed by a technician from the laboratory of Dr. Oscar B. Hunter, are recorded pages vi to viii in appendix. It will be seen that of the seven pupils who were selected and able to cooperate, three or 42.8 per cent showed a rate in excess of Plus 15 per cent, which is suggestive of there being a mild hyperthyroidism. It is believed that a like or greater percentage of the group with the recognized concomitant symptoms would have shown an abnormally high B. M. R.

Pupil No. 12, owing to her spinal deformity and heart rate, No. 31 with sternum deformity, and No. 37 with asthenic build and with heart which failed to assume pre-exercise rate, through their structure may conform to the type of D. A. H. noted by Sir Thomas Lewis[25] in his original description as caused by "inherited disability."

Further, Pupils 10, 25, 28, 30, 34, 37, 46, 52, 62,* 63, 69, 71, 72, 73, 75, 80, 85, 92, 93, 96, 110, 123, 127, 132, 142 and 143 showed an increase after exercise of twenty beats or more with failure to return to pre-exercise rate in three minutes. Although very few are pronounced cases, it would seem that most of these girls actually or potentially are in the effort

*Bradycardia.

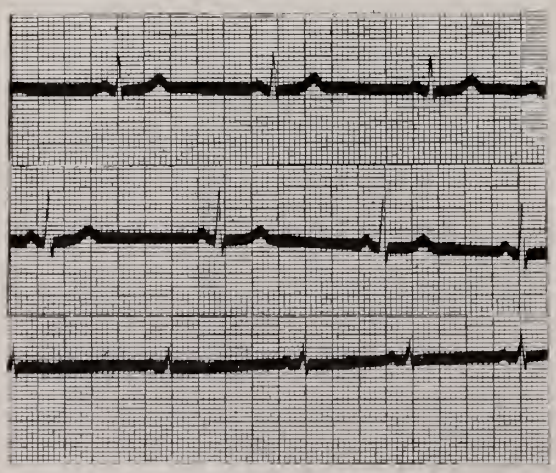
syndrome class and rather need at present a lighter grade of exercise than the sudden severe strain incident to competition.

It is of interest that in *Students 4, 38, 50 and 89, enlarged glands in neck were a prominent factor, indicating possible foci of infection in throat.

Tachycardia in Relation to Myocardial Disease

Cases 19, 2, 16, 30, 29, 23, 17 and 1 have, in addition to tachycardia, such findings as impurity of first sound, murmur at apex, slightly thickened radials, abnormal pulsations, rhythm upsets such as extra systoles, acceleration of beats—the latter not sinus arrhythmia—and aortic murmurs. They may be classed as suspects of organic difficulty. We should again note the experience of Conner, and also bear in mind that myocarditis is very rare in young people when unaccompanied by appreciable hypertrophy. These girls then may still be entirely in the category of functional heart disease, but the evidence elicited is worthy of thought. We have to leave them, owing to limitation of this work, as suspects, and recommend that a further observation be made.

Tachycardia at best reveals poor training and has been shown to improve with applied effort. Probably some of those presenting rapid heart action, with proper attention given by physical instructor would show different reaction to exercise at a later time.



Case No. 62.—April 4, 1928.
Rate: 45 auricular and ventricular. P. R. Int. .16.
Graphic Interpretation:
1. Axis plus 63°—normal.
2. Sinus bradycardia and sinus arrhythmia, probably arising from over-activity of the vagus.

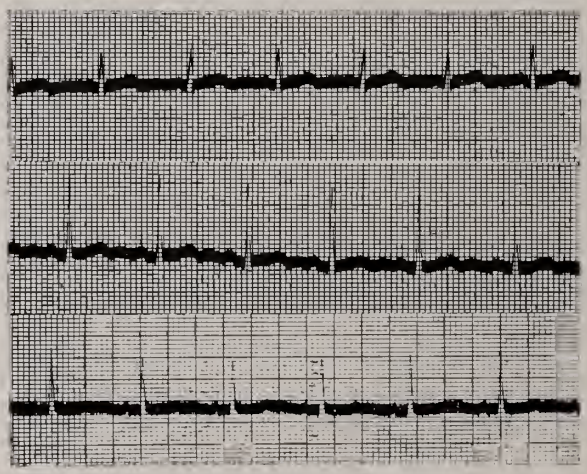
*This observation made only on preparatory school group.

Bradycardia

As has been stated, one girl exhibiting bradycardia was found, vide No. 62. In addition there was a roughening of first sound with a slight arrhythmia. She was also overweight. Because of the slow rate, an electrocardiograph and X-ray study were made to determine whether the bradycardia was neurogenic or myogenic in origin. Sinus bradycardia was graphically shown (see accompanying electrocardiagraph) there being no evidence of myocardial disease. It is known that a slow heart does not necessarily mean diseased muscle. In this particular case there should be a search made for presence of an etiological toxic factor which often accompanies sinus bradycardia.

Abnormalities of Heart Sounds and Rhythm in Relation to Organic Disease

Cases 54, 56, 58, 65, 55, 58, 59, 60, 61, 63, 64, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75 and 76, in all twenty-two pupils, show either rhythm



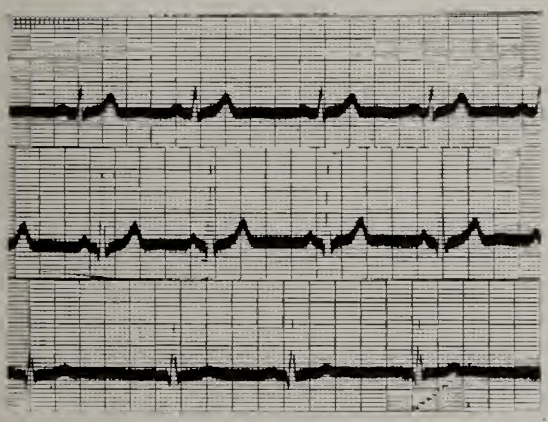
Case No. 65.—April 25, 1928.
Rate: 60 auricular and ventricular. P. R. Int. .18.
Graphic Interpretation:
1. Axis plus 68°—normal.
2. Sinus bradycardia, probably arising from over-activity of the vagus.

upsets extra systole "quick pulse," systolic murmur over aortic area transmitted to neck vessels, thickened radials or abnormalities of sound. Case No. 56 showed elevated systolic pressure in addition to thickened radials. It would have been particularly desirable to have made a study of all with electrocardiograph. Cooperation was obtained in cases 65, 55, 67, 68 and 59; of them electrocardiographic and X-ray studies were made. These studies were accomplished through the cooperation of Dr.

James Alexander Lyon. The following is a discussion of the individual cases:

Case No. 65: This girl showed a marked accentuation of the second pulmonic, and what appeared to be an occasional extra systole; her arteries were recorded as "one plus." With the marked accentuation of the second sound to left of sternum, it was desired to know if there was anything of an intra-cardiac nature causing this. The electrocardiograph exhibited a sinus arrhythmia; the extra systole was not confirmed. It remained for the Roentgen ray examination of chest to reveal what I believe to be the probable cause of the accentuation. There were found not only enlarged glands at hilus but marked peribronchial thickening, suggesting increased resistance, with accompanying increased pressure in the lesser circulation. Her lungs need further study.

Case No. 55: This girl exhibited a systolic murmur over both the pulmonic and aortic areas with transmission to carotids; her second pulmonic was greater. A so-called functional murmur is heard over both the pulmonic and aortic areas at times. A coincidental murmur over carotids may mean an



Case No. 55.—April 25, 1928.
Rate: 55 auricular and ventricular. P. R. Int. .18.
Graphic Interpretation:
1. Axis plus 70°—normal.
2. Sinus bradycardia and sinus arrhythmia, probably arising from over-activity of the vagus.

aortic sternosis; with this, the murmur over aortic areas is usually harsh and there is heart enlargement. Roentgenogram of heart showed no apparent enlargement.

Case No. 67: Showed on clinical examination an accentuated second pulmonic with an arrhythmia. Some enlargement of heart to right was demonstrated by X-ray.

Case No. 68: Gave clinically an arrhythmia with accentuation of P2.

Case No. 59: Here we have again a systolic murmur over both aortic and pulmonic areas transmitted to carotids, accentuated A2.

It is thought that all of the twenty-two cases exhibiting signs of various degrees of cardiac involvement such as rhythm upsets, extra systole, "quick pulse," etc., should be under observation. Case No. 65, as stated, should have a careful examination of lungs. Cases 55, 59, 67, 68 and 65, the two former who had suggestive electrocardiographic findings, should be restricted to exercise not involving competition. Although a definite diagnosis cannot be made in cases 55 and 59, a stenosis of the aortic orifice would seem eliminated because no enlargement of heart was demonstrated. An aortitis is suggested on account of murmurs. It should be borne in mind that "heart strain" is a real entity. Morris H. Kahn and Samuel Kahn,[26] examiners in New York State Department of Labor, writing in the *Annals of Medicine* state ". . . observations made in athletes indicate that prolonged over-exertion even in the trained individual may affect the heart . . ." "It (heart strain) will come on earlier . . . when the heart is not mature—as in young adolescents who do vigorous exercise." Further they state, "The electrocardiogram indicates left ventricular predominance."

Extra Systoles

Extra systoles were shown in study of cases 12, 1 and 65. Of this rhythm upset it might be said that it does not necessarily indicate disease although it often accompanies a diseased myocardium. Middle age is the time for their frequent occurrence. We feel with S. Calvin Smith[27] that extra beats are always a sign of protest and should be respected. It should be noted that the electrocardiograph of case No. 65 did not confirm the clinical finding. As extra systoles notoriously are irregular in time of appearance, their absence in electrocardiographic tracings does not vitiate the clinical finding.

Systolic Murmurs Over Pulmonic Area

Concerning the soft non-transmitted systolic murmurs over the pulmonary area described by the French as Les Souffles Anorganiques on page 74, Diseases of Heart, by Vaquez-Laidlaw,[28] published by Saunders, 1925, we learn that Potain taught that they were extra-

cardiac or, better, cardiopulmonary, because they arose not from the heart but from the lungs. According to his explanation with systole there is a retraction of heart with creation of vacuum, the adjoining anterior borders of lung being filled with an inrush of air. During inspiration it is the external air; during expiration the residual air. E. Thomas[29] in an article in the *Revue Medicale de La Suisse Romande* states that these murmurs are rare before the age of three and one-half years. He further points out that they are more frequent in females at puberty. He states their exact cause is not entirely known, but he leans toward acceptance of Potain's view. Deep breathing plus tachycardia favors their development and, as Thomas states, they are most frequently found in females near age of puberty. Relaxation of pulmonic orifice and anemia also are advanced as causes. On page 78, Vaquez does not support Weil's view that pressure on eye-balls will eliminate extracardiac murmurs, although, according to Vaquez, it will slow a rapid heart.

As given above, 18 per cent of the girls exhibited this murmur, soft in quality and limited to pulmonic area.

NOTE.—Electrocardiography and Interpretation by Dr. James Alexander Lyon.

SUMMARY

1. A study is made of the objective findings relating to the circulatory system of 150 adolescent girls who are candidates for or participants in competitive athletics.

One hundred and thirty-one were high school students,

Nineteen were students in a private preparatory school.

2. High school:

Twenty-four or 18.3 per cent were overweight,

Thirty-one or 23.6 per cent were underweight.

Private school:

Four or 21.05 per cent were overweight,

Seven or 36.8 per cent were underweight.

3. Of total of twenty-eight girls overweight

Three or 10.7 per cent were in hypotension grouping,

Twelve or 42.8 per cent exhibited tachycardia.

Of total of thirty-eight girls underweight

Fourteen or 36.8 per cent were in hypotension class,

Eleven or 28.9 per cent exhibited tachycardia.

4. The following showed poor response to functional tests:

High School: Twenty-one or 16.03 per cent,

Private school: Three or 15.7 per cent.

5. Blood Pressure average for 150 girls:

Systolic: 110.4 mm.

Diastolic: 67.4 mm.

Pulse pressure: 43 mm.

6. Average age entire group: 15.7 years.

7. Elevated systolic blood pressure with tachycardia:

High school: Fourteen or 10.6 per cent.

8. Hypotension:

High school: Thirty-seven or 28.2 per cent.

Private school: Nine or 47.3 per cent.

9. Somewhat thickened radials:

(Entire group): Twelve or 8 per cent.

10. B. M. R. was estimated in seven instances:

Three or 42.8 per cent showed a rate in excess of Plus 15 per cent.

11. Electrocardiographic studies and X-ray revealed in six cases:

1 Left axis deviation. Sinus arrhythmia and simple paroxysmal tachycardia.

1 Simple paroxysmal tachycardia.

2 Sinus bradycardia and sinus arrhythmia. Probably arising from an overaction of the vagus.

1 Sinus bradycardia. Probably arising from over-activity of the vagus.

1 Enlarged glands at hilus.

CONCLUSIONS

1. It is revealed that there are a number of girls presenting findings that should preclude their engaging in competitive sports. From this study we would state the criteria for disqualification as follows:

(a) Underweight with hypotension.

(b) Tachycardia with poor response to exercise.

(c) Tachycardia plus hypertension with other evidence, based either on clinical signs or B. M. R. test of hyperthyroidism.

(d) Rhythm upsets with impurity of first sound or transmitted murmurs at base.

(e) Demonstrable evidence either through electrocardiograph or X-ray of probable myocardial involvement.

It must be recognized that a number of individuals will be found in this survey and

other studies who do not fall in these groupings but who should be excluded for evident disability; and further that there may be individuals failing at one time to qualify physically who later, after proper training, may be acceptable.

2. It may be inferred that studies of other groups of adolescents engaging in competitive sports would reveal as many individuals who would obviously jeopardize their well-being by engaging in strenuous exercise. Physical educators and municipal authorities should beware of this and see that adequate personnel is furnished the medical inspection service to perform these examinations.

3. As a procedure in preventive medicine, careful physical examination of candidates for or participants in competitive athletics in secondary schools is capable of abundant accomplishment.

BIBLIOGRAPHY

1. Ireland, M. W.: "Physical Defects Discovered in Selected Draft Men." *J. A. M. A.*, 79:1578, 1922.
2. Bose: *Indian Medical Record*, March, 1927.
3. Bloedorn, Walter: *Am. Jour. Med. Sciences*, pp. 385-396. Vol. 1927:173.
4. Damez, Marie K, Dawson, Percy M., Mathis, Dorothy and Murray, Margaret: "Cardiovascular Reactions in Athletic and Nonathletic Girls," *J. A. M. A.*, pp. 1420-1422, Vol. 86:19, May 8, 1926.
5. Holt, L Emmett: "Food, Health and Growth." Macmillan, New York. pp. 74-76, 1922.
6. Baldwin, T., Bird and Wood, Thomas, D.: Mother-Child, *Am. Child Health Association*, Supplement to July, 1923, issue.
7. Bowen: *Amer. Jour. of Physiology*, Vol. XI, 59:1904.
8. Bainbridge: "Physiology of Muscular Exercise." London, 1919.
9. Pembrey: "Further Advances in Physiology." Ed. by L. Hill, London, 1909, 228.
10. Flack and Bowdler: "Reports of the Air Medical Investigations Committee," London, No. 2, 1918, 12.
11. Rosen and White: *Amer. Jour. of Physiology*. pp. 168-184, 1926, 78.
12. Krogh and Lindhard: *Skand. Archiv. f.-Physiol.*, 1912, XXVII, 100.
13. Boos, Ernest: *Am. Jour. and Record*. September 3, 1924.
14. Gillespie, R. D., Gibson, C. R., Jr., and Murray, D. S.: *Heart*, London, pp. 1 to 22, 1925, 12.
15. Schneider, Edward C.: "A Cardiovascular Rating as a Measure of Physical Fatigue and Efficiency." *J. A. M. A.*, pp. 1507-1510. Vol. 74:22.
16. Crampton: *J. A. M. A.*, April 16, 1921. 76: 1121.
17. Bloedorn, Walter: *Am. Jour. Med. Sciences*, pp. 385-396. Vol. 1927:173.
18. Dearborn, Geo. Van Ness: *Am. Phys. Educ. Rev.*, 20:337, 414, 1915.
19. Conner, Lewis A.: *Amer. Jour. Med Science*, pp. 773-782. Vol. CLVIII.
20. Parkinson, John: *Canadian Med. Assn. Jour.*, September, 1924.
21. Conner, Lewis A.: *Amer. Jour. Med. Science*, pp. 773-782. Vol. CLVIII.
22. Campbell, J. M. H.: *Guy's Hosp. Reports*, Vol. 77, pp. 184-215. April, 1927.
23. Brooks, Harlow: As quoted by Lewis A. Conner *vide supra*.
24. Lewis, Sir Thos.: "Soldier's Heart and Effort Syndrome," published by Paul Hoeber and Company.
25. Lewis, Sir Thos.: Ibid.
26. Kahn, Morris H., and Samuel: *Annals of Int. Med.*, April, 1928. Vol. 1, No. 10, p. 790.
27. Smith, S. Calvin: *J. A. M. A.*, Vol. 86, No. 25: June 19, 1926.
28. Vaquez, Laidlaw: "Diseases of Heart," pub. by W. B. Saunders Co., 1925.
29. Thomas, E.: *"Revue Medicale de La Suisse Romande.*, January, 1923.

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Fortunately for the folk of the United States of America, urinary bilharziosis, or schistosoma haematobium, as it is also called, is not often encountered among them. This diseases is named after Bilharz, who first associated the concurrent hematuria with the parasite at Cairo in 1851. The genus of snails, the *bullinus*, which acts as the host of the flukes causing the disease, is not infested with these parasites in this country. Therefore, the only cases which come to the attention of American doctors are those in which the infection has been picked up in lands like Greece, Egypt, Syria, Turkey, Uganda and South Africa. For this reason, the disease is but a casual occurrence here; this state of affairs, however, is by no means true in the countries mentioned above.

Seeing it so seldom, American physicians might be led to think that urinary bilharziosis is rare in any part of the world. This would be a totally erroneous concept of the matter, as it is not only very grave and distressing in certain of the states bordering upon the Mediterranean sea, and in northern Africa, but it is also very common there.

Sharply and concisely to place the amount of schistosoma haematobium in its proper setting in the understanding, recourse is had to a recent report of Dr. Khalil, Professor of Parisitology in the Faculty of Medicine, Cairo.

*Read before the April meeting of the Staff of Protestant Hospital, Norfolk, Va.

To determine the possibility of eradicating the infestation in an endemic area, he selected the Egyptian oasis, Dakhla, for his experiment. This oasis is situated some four hundred miles from the Nile river. It is reached partly by railway and partly by desert motor cars, so that its location ensured a complete isolation rarely available elsewhere.

Quoting from this very interesting, unusual, and effective work, we find: "Forty per cent of the inhabitants of the village submitted their excreta for examination; 63 5/10 per cent were found infested with schistosoma haematobium. The main stream of the village, originating from an artesian well, was found to contain large numbers of *bullinus* snails. Copper sulphate was continuously added to the stream for four days and nights by a specially improvised apparatus. At the end of the experiment all *bullinus* snails were dead."

"After six months the area was visited again and carefully surveyed. No living *bullinus* snails could be found, in great contrast to their abundance before the experiment. The six months interval was the hottest period of the year, and the most favorable time for the propagation of the mollusca. The area will be surveyed at intervals, and if the results are as good, similar experiments will be tried in the Nile Valley itself. No deleterious effects were observed on the vegetations, animals, or man as the result of the experiment."

Thus we see that more than one-half of the natives of Dakhla, whose excreta was examined, were positive for the disease. This gives us a correct mental picture of the prevalence of bilharziosis in certain parts of northern Africa, and when we are called upon to treat a sojourner from those parts for urinary disturbances, we should bear in mind that possibly we are confronted with a case of schistosoma haematobium. To do otherwise would be to court an experience similar to that narrated in the first of the two cases reported later on in this article.

The selective affinity of schistosoma haematobium to the urinary system is an unsolved puzzle to the parisitologist. It seems to avoid most seduously all other parts of the body except those that are components of the urinary mechanism; by all odds the most frequent victim of these is the bladder. However, the method of approach *is* understood, and the *modus operandi* is a queer and devious phenomenon.

The ova pass out of the human in the urine, and then they will not live long unless they quickly reach water. There, however, they soon change into the stage of the life cycle known as miracidium. The miracidium is able to swim about at will in water; it cannot and will not infest man. Unless the miracidium finds a snail, like the *bullinus*, within forty-eight hours to act as an intermediate host, it dies. Having found an acceptable intermediate host, the miracidium proceeds to form a sporocyst in the liver of the snail. After a varying period of days the male and female embryos that infest man are extruded from this hepatic sporocist into the water in which the snail lives. These embryos, the infective stage for man, can also swim about easily, and thus many of them come into contact with human beings.

At one time Allen believed that the embryos penetrated into man by way of the prepucial mucosa. Since all ages, and both sexes, suffer alike with the disease, this theory was a bit difficult to associate with women. It now appears to be more likely that both the mucous membranes *and* the skin may be the points of entry. Like snake venom, the embryo will not survive a normal hydrochloric acid content, so that the intestinal tract, unless the approach is through the anus, is not at fault when infected water is ingested.

Having gained an entrance into the human animal, the embryos quickly seek out the portal circulation, where the male and the female proceed to mate. In the process of mating they become firmly adherent one to the other, and in this wise they make their united way against the blood-stream to the small veins in the bladder. Upon reaching this location, they take up lodging, and the female begins to lay her many eggs. The eggs, or ova, penetrate deeply into the bladder walls. Many of them pass entirely through and emerge into the vesical cavity, where, as you recall, we found them at the beginning of the story.

The symtoms of urinary bilharziosis may vary from a slight, painless hematuria to the most intractable and agonizing cystitis. Along with this, there may be pathological conditions from the same cause in other parts of the urinary system, and then the symptoms may embrace all those that are ordinarily found in

the various types of inflammation noticed in these structures. If we bear in mind the fact that it takes from three to six months from the time of infestation until the female begins to lay enough eggs to give rise to symptoms, we appreciate the fact that the onset is apt to be mild. On the other hand, when we know that the disease may remain in the body for as long as four years in an active state, if it is not subjected to specific treatment, we see at a glance that here is a fertile field for an amazing diversity of pathology, together with a fine opportunity for wide and distressing symptomatology.

An uncomplicated carcinoma of the bladder usually is a painless thing. It is not until the neoplastic process has developed to the point of degeneration and ulceration that much physical distress is noticed. Such an area of necrosis is an avenue of entrance to pyogenic bacteria, and the mixed infection which follows is really responsible for the discomfort of the patient. So, likewise, it is with bilharziosis. Enormous numbers of ova—as many as four thousand a day—may be extruded from the bladder walls, and yet the patient may be free from painful symptoms. However, the *points of exit* of these ova are also *avenues of entrance* for pyogenic micro-organisms, and the concurrent pus infection is the agency which dooms the patient to his morbid hell. Then may follow prostatitis, ureteritis, urethritis and pyelitis, together with their individual trains of symptoms.

Long standing pathology of an acute inflammatory type is not prone to remain strictly localized. When it is aided and abetted by an active co-conspirator against the body welfare, like that of the burrowing ova of bilharziosis, extensive peregrinations into surrounding structures are by no means unusual, so that numerous and extensive sinuses and fistulae are often encountered. It would be both tiresome and inappropriate to trace this complexity of symptoms further to a gathering which is so familiar with the results of untreated and unchecked infections of the urinary tract. It is quite pertinent, however, to remark that bilharzia infections in the bladder often degenerate into carcinomata, and that vesical calcareous formations are frequent.

The diagnosis is most certainly made by finding the ova in the centrifuged urine. Failing in this, the history is so very suggestive that a diagnostician, who is conversant with the infestation, will seldom go wrong.

The modern, specific treatment of schistosoma infestations was introduced and put upon a sound basis by Christopherson in Khartum. Using intravenous injections of tartar emetic (antimonium tartrate), he reported the rapid cure of the disease in seventy cases. The drug seems to have a cumulative action toward the adult worm, and its results are controlled by observations upon the ova in the urine. For this purpose the freshly passed urinary deposit is mingled daily with warm tap water, and the hatching of the ova is watched. Under normal conditions they are hatched in about five minutes; after the injection of tartar emetic it is found that they are no longer passed in a viable state. Such ova as may appear in the urine are dark and shriveled. It is thought that the appearance of the ova altered in this manner, or their absence, coincides with the death of the adult worm.

The intravenous injections are given on alternate days over a period of fifteen to thirty days. Christopherson began with a dose of ½ gr., of the tartar emetic dissolved in 6 c.c. of sterile normal saline solution. The injection is increased at each dose by ½ grain rises until 2½ grains are administered at a single sitting. In giving the larger doses the total amount of the fluid is brought up to 10 c.c.

There are many drawbacks to the use of tartar emetic by the intravenous route. It induces a profound and debilitating cellulitis if it is deposited by accident outside of the vein. This is a grave obstacle in fat people and in children. A very distressing cough may follow its administration, while nausea and vomiting are not unusual. Death has occasionally resulted from its introduction into the venous circulation.

A new organic antimony compound has recently been introduced for the treatment of schistosomiasis. It is called fuadin, and it is injected intramuscularly. The abscess formation, chemical cellulitis, etc., which result from faulty administration of tartar emetic do not occur with this drug. It seems to possess none of the other constitutional drawbacks so frequently associated with the injection of tartar emetic. The duration of treatment has been shortened by fuadin from twenty-nine to nineteen days. The treatment, unlike treatment with tartar emetic, does not need any special

skill in administration. The intermediate and late results are superior to those of tartar emetic.

Although no mention has been made of it in this connection, it has occurred to the writer that fuadin may be superior to tartar emetic, and other antimony compounds at American disposal, in the treatment of granuloma inguinale. Messrs. Hynson, Westcott & Dunning, of Baltimore, Md., are endeavoring to get in touch with the source of supply of fuadin, and in all likelihood experimental work will soon be done along that line in this country.

The reports of the two cases following are very instructive. The first was an advanced infestation; the second was recent in its onset. At the time that the first case was studied, insofar as Dr. Townsend, Surgeon of the United States Public Health Service, and the writer knew, but one other case had been reported in this country—that of Pederson. Unfortunately Pederson's report was not studied by us until we were looking up the literature at the time that we were contemplating publishing our case. In the first case the attendants were in the dark as to what they were dealing with at the beginning, and so failed to make an early diagnosis. For this reason the cure was much delayed, the patient was subjected to an unnecessary cystotomy, and, as a result of all this, he suffered much needless misery. In the second case the attendants were on guard, and the infestation was so quickly gotten under control that the patient experienced no inconvenience at all. May not this array of facts be an acceptable excuse for taking up so much of your time with the discussion of a disease so rare in America as is schistosoma haematobium, and for presenting so great a paucity of clinical material with which to illustrate the talk?

Case One.—On February 22nd, a married male patient, by occupation a seaman, aged 25, a native of Port Said, Egypt, was admitted to U. S. Marine Hospital No. 29.

Complaint. Sore eyes and loss of appetite.

Family History. Negative except that one brother had a severe form of bladder trouble.

Past History. Negative. Patient denies any venereal trouble.

Present History. Developed sore eyes eight months ago. Condition has gradually been becoming worse. Appetite has been deranged for several months.

Physical Findings. Cornea of both eyes hazy. Conjunctiva quite inflamed. Other findings negative.

Progress Subsequent to Admission. Conjunctivitis improved slowly under treatment. On March 24th, patient complained of severe pains in the bladder, and upon urination. At this time he developed an intermittent hematuria. Transferred to urological service and was seen in consultation. The pain soon became that of an intense cystitis which demanded relief by opiates. The urine was deeply pigmented with blood. The general condition of the patient fell off quite rapidly, and in a few days, he developed symptoms of acute pyelitis. The temperature chart showed a slight pus curve. Pain in the bladder and kidney regions became intense and constant. He seemed to be nearing a collapse. No satisfactory explanation could be found to account for this state of affairs.

Cystoscopy on March 31st revealed an atypical and puzzling pathology. The bas-fond was deeply congested. There were areas of small, irregular, shallow ulceration around the ureteral outlets. Numerous greyish white patches appeared on the mucosa. These white areas seemed to be neoplastic in places; they were noticeably raised above the mucosal level, and gave the impression of irregular, brawny papillomata. The bladder was exquisitely sensitive and tolerated instrumentation poorly.

To avoid a possible confusion with advanced tuberculosis, careful checking up for that disease was done. Phthalein function was normal for both kidneys, no pathology revealed by pyelography, and no tubercle bacilli demonstrated in the urine. There were quantities of red cells in the excretion from both kidneys.

The patient was submitted to a calminative regimen for several weeks. Cystoscopy was then repeated. The visual pathology had changed surprisingly. The picture was by no means the same as that observed on the first examination. Some of the ulcers had healed; many of the papillomatous excrescences had disappeared, and others had sprung up in new places. The impression gained was that of an advancing, shifting neoplasm of undetermined nature, a pathology which was at total variance with true papillomata. A true papilloma, either benign or malignant, would not possess these phantom characteristics.

Operation was advised, and the viscus was opened on April 4th. The growth occupied the entire base and extended to the lateral walls. It took on the appearance of a flat, nodular, non-ulcerating carcinoma. Since both ureters were deeply involved at the vesical junction, and since the kidneys seemed to be implicated in the process of the disease, no attempt was made to eradicate the growth. A section was made for the pathologist, and the bladder drained.

The patient seemed to be considerably relieved from the painful symptoms by his operation. Mackey and others recommend drainage of the bladder by suprapubic opening for the acute symptoms of this disease.

A specimen of the growth was sent to Washington for examination. The following report was returned by Drs. Butler and Harper, of the Naval Medical School: "Papilloma due to schistosoma haematobium (vesical bilharziosis). Section shows schistosoma haematobium in tissues. Epithelial hypertrophy. Eosinophiles. Increase of connective tissue. No definite evidence of malignancy."

It might be said in this connection that eosinophilia is a blood finding in the disease. The present case showed an eosinophile percentage ranging from 4 to 15 per cent.

The patient was put upon intravenous medication with tartar emetic immediately. The dose was ½ grain in the beginning, and was increased in ½ grain advances, as recommended by Christopherson, until 2½ grains was given at a time. The dosage was administered on alternating days. A total of 20 grains was given over a period of forty-one days.

The patient improved very rapidly under this treatment. Blood quickly disappeared from the urine, and in the course of a few days ova were not demonstrable in that fluid.

All symptoms having been relieved, cystoscopy was repeated on June 26th. The following report is noted: "Bladder surface normal. Lesions, previously described, healed."

The patient was discharged on July 10th, with a chart note of "Hospital treatment not further indicated." He has not been seen since. It is inferred that he would have been heard from if further trouble had ensued.

Case Two.—A Greek, male, recently arrived in this country, aged 22 years, presented himself with the complaint of painless, bloody urination.

Past History. No venereal disease. Two years ago experienced a similar attack as the present in his native country. Was treated with some unknown intravenous medication. From that time until the present has noticed no symptoms.

Present History. Unreliable. Speaks no English. The present condition seems to have existed for three or four weeks.

Physical Examination. Negative except for "G-U" tract. The nationality of the patient, the history of a similar attack of painless hematuria in the past, and the information that the trouble had been corrected by intravenous medication, all pointed the finger of suspicion to schistosoma haematobium. A search for the ova was made. The laboratory repeatedly reported that the urine was negative.

At cystoscopy the following findings were noted: The instrument passed with but little pain and no urethral resistance. This was evidence *per se* that the urethra was not involved by a bilharziosis. The findings in this case in this respect were diametrically opposite to those in Case One. In that instance the urethra was involved, and the patient suffered intense pain upon the gentlest instrumental manipulation within it.

Patches of mucosa in the fundus were blanched, and presented irregular areas of thickening and nodulation. Since no active inflammatory process could be noticed in that area, it was assumed that this condition was due to the previous attack. The bladder walls undergo a marked thickening when subjected to the action of schistosoma haematobium, and there is also a generous deposition of fibrous tissue within them. Therefore, we inferred from this that the previous attack was fairly severe.

In the base of the bladder toward the lateral walls there were several active bilharzia nodules. These are rounded areas of elevation above the surface having a yellowish cast, and are surrounded by a narrow red halo of congestion. These nodules bled easily. The outlets of the ureters appeared to be about normal, and catheter specimens revealed no pathology in the kidneys.

The diagnosis of schistosoma haematobium was made upon the cystsoscopic findings, and upon the history.

Two intravenous doses of tartar emetic promptly stopped the bleeding. The patient

must have been eminently pleased with his condition, or else the effects of the medication were not to his taste, because he returned for no further treatment. It is our confident opinion that he will have further trouble. Two doses of tartar emetic are not regarded to be curative. This patient received but one and one-half grains of the drug. It is thought that about twenty grains are needed to cure.

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EMBOLISM OF THE ABDOMINAL AORTA: REPORT OF A CASE.*

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There have been at least 111 cases of embolism and thrombosis of the abdominal aorta collected from medical literature.

Banowitch and Ira summarized the literature in 1928. Welch reported fifty-nine cases in 1899. Hesse in 1921 added thirty-two more cases. Wylde in 1922 reported two cases and was able to collect ninety-two other cases from the literature. Banowitch and Ira collected eleven more cases. They reported five cases of their own, making a total of 110.

Hamilton in 1930 reported one case which was associated with aortic stenosis.

The majority of the cases have been associated with chronic cardiac and vascular diseases. Over 50 per cent have been definitely mitral stenosis with auricular fibrillation. Of the five reports by Banowitch and Ira, all were fibrillating. Four had mitral stenosis and one hypertensive cardio-vascular disease.

I wish to add one case associated with mitral stenosis and auricular fibrillation.

N. D., age 59; male; mate on tug boat; admitted to hospital June 11, 1930.

Past History: Malarial fever when a young man; rheumatism when a young man; insane asylum forty days, twenty years ago, for drinking; several previous admissions to this hospital between April 28, 1929, and April 5, 1930. Diagnoses: Valvular heart disease, mitral stenosis, and embolism, cerebral.

Chief Complaint: "Something like pneumonia coming on."

Present History: Patient received an injury to right chest two months ago as the result of an automobile accident. He received treatment at the Custom House, Norfolk, Va. About ten days ago he had a head and chest cold. Was not confined to bed. Expectorated much greenish-yellow sputum. Had indefinite pain and soreness in right chest and abdomen. There had been several attacks of nausea and vomiting following abdominal pain. Voided once or twice nightly.

Physical Examination: General appearance showed a poorly nourished, restless old man; subject to frequent paroxysms of coughing with expectoration of greenish-yellow sputum. Was muttering to himself. When addressed was mentally alert.

Head and Neck: Essentially negative.

Chest: Was flattened with poor expansion generally. Fremitus was normal. Resonance was diminished generally. No rales were heard.

Heart: The apical impulse was diffuse. At the apex there was a presystolic thrill with a systolic shock. In the fifth interspace the left border dullness extended 10½ cm. from the midline. At the apex there was a presystolic rumble with a rough accentuated first sound. The second pulmonic sound was rough and loud. Rhythm was regular. Blood pressure was 118/90. There was no marked sclerosis of the peripheral vessels.

Abdomen: Liver and spleen were not palpated. No masses. No tenderness.

Inguinal Rings: A small inguinal hernia was present on the right.

The remainder of the physical examination was negative.

Temperature was slightly elevated going to 100.4 at one time.

Urinalysis negative.

Blood: The W. B. C. was 12,000. Blood Wassermann was negative in all antigens. X-ray of the lungs showed a fracture of the seventh rib and chronic bronchitis.

Two days after admission the patient was seen in the afternoon with an irregular pulse and a definite pulse deficit. An electrocardiographic record was characteristic of auricular fibrillation.

The following diagnoses were made:

Mitral Stenosis. Auricular Fibrillation. Fracture Seventh Rib Right.

He was given tincture of digitalis 4 c.c., q. 4. h., for five doses, codeine cough syrup q. 3. h., p. r. n., and morphine when very restless.

On the following two days the patient ap-

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peared much better. His cardiac rhythm was restored to normal. The cough was much better and temperature was nearly normal.

June 16, 1930, five days following admission, he called the ward surgeon at 2:25 P. M. He appeared to be in acute shock. He stated that a sudden, unbearable pain had struck him in the lumbar region, middle abdomen, and lower extremities. There was cold sweat over the upper half of his body. Purplish blotches covered the skin from the umbilicus downward. Over this same area there was complete motor loss and sensory paralysis. Blood pressure was 160/80. There was no pulsation in femoral vessels. A diagnosis of embolism of the abdominal aorta was made.

The patient continued to suffer with pain in the lower back, abdomen, and lower extremities. He received some relief by the frequent use of morphine.

The following day he was somewhat more comfortable but was very apprehensive about his condition. Urination was involuntary.

On the second day the abdomen was very tender on pressure. There was an increase in the bluish-purple color of the lower extremities. The lower extremities were very cold. A moderate degree of ileus was present.

Urinalysis showed albumin very positive with numerous coarse granular casts.

R. B. C. 5,680,000. Hbg. 84 per cent. W. B. C. 27,000. Neutrophils 84 per cent. Large Lymphocytes 4 per cent. Small Lymphocytes 12 per cent.

The patient died June 19, 1930, about sixty-seven hours after the onset of the embolic symptoms. At the autopsy the stomach was found to be markedly distended. About one-half of the intestines presented a gangrenous appearance. This was most marked about twelve inches from the proximal end of the jejunum. The abdominal aorta was exposed. Just above the bifurcation was an enlargement which was firm on palpation. On opening the aorta there was found a freely movable embolus 2x1x½ cm. in size. Distal to the embolus were soft thrombi in the iliac and femoral vessels. The heart showed thickened, hardened, stenosed mitral valves with a roughened spot between the leaflets which could have been the original site of the embolus.

It is noted that death occurred five hours less than three days from the onset of the embolic symptoms. Of the cases of Banowitch and Ira, death occurred within two days for two, fourteen and fifteen days, respectively, for two other cases, and in one instance was delayed twenty-nine days after the beginning of the symptoms of occlusion.

The treatment of this case was entirely symptomatic. There are two forms of radical treatment. The less radical consists in attempting to massage the abdominal aorta forcibly enough to express the embolus into a smaller vessel. If successful, amputation of a gangrenous extremity is later necessary. I do not know how successful this method has been. The more radical procedure is aortotomy with removal of the embolus. Hesse reports a successful embolectomy where the operation was performed twelve hours after the onset of the occlusion. Bauer reports a case with the successful removal of the embolus three hours after the onset. Eleven cases of embolectomy with fatal issue are on record.

References

Banowitch and Ira: Embolism and Thrombosis of the Abdominal Aorta. Report of Five Cases. *Medical Clinics of North America*, January, 1928, pp. 973-1000.

Hamilton, J. F.: Embolism and Thrombosis of the Abdominal Aorta. Report of a Case. *Southern Medical Journal*, June, 1930, pp. 532-535.

ADDISON'S DISEASE IN A NEGRO—REPORT OF A CASE.*

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and
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Addison,[1] in 1855, was able to report in his excellent monograph eleven cases of the syndrome which has since borne his name. Although endocrine dysfunction has been much in the foreground in recent years, proven cases of Addison's disease appear to be comparatively rare.

This is particularly true among Negroes—a surprising fact in view of the high incidence of tuberculosis in this race. Their natural pigmentation unquestionably makes the diagnosis more difficult and may explain, in part, why relatively few cases have been reported in the literature.

Lemann,[2] in 1926, reported the first case of Addison's disease in a Negro. Two years later Evans[3] recorded three more cases. In 1930 Sala and Jacobi[4] added a fifth case and reviewed the literature of the past forty years.

*Read before the Albemarle County Medical Society, Charlottesville, Va., January 8, 1831.

In three of the five cases the diagnosis was confirmed by post-mortem examination.

The case here reported was studied in the University of Virginia Hospital under observation of the authors.

Case Report

C. G., a colored carpenter, aged 49, was first seen in the Medical Out-Patient Department July 22, 1930. The chief complaint was progressive weakness since a mild attack of "influenza" twenty-one months previously. The additional symptoms were vague joint pains, loss of weight, constipation, intermittent pains in the left chest, and generalized increased pigmentation of the skin. He had been unable to work for three months.

Physical examination revealed a well developed colored man in a fair state of nutrition. The mucous membranes of the mouth were paler than normal; the teeth were in bad condition, and pyorrhea was present. The nasal sinuses transilluminated well, but there was a mucopurulent post-nasal discharge. The chest was normal except for a few subcrepitant râles elicited on the left side above the third rib anteriorly and the fourth dorsal spine posteriorly. Slight tenderness was noted on deep palpation of the abdomen about three inches to the left of the umbilicus. This, however, was unaccompanied by spasm or rigidity. The fingers were clubbed and the nails curved. There was a small tender swelling just above the left wrist on the inner surface of the forearm. The general hue of the skin was mahogany-brown. There was definite increased pigmentation of the face, hands, feet, and abdomen. According to the patient's statement his color had deepened during the present illness. The patient's father, whose skin was light brown, remarked that his son's color formerly resembled his own. The blood pressure was 108/60. Weight 147½ pounds. Hemoglobin 60 per cent (Talquist).

Temperature 99.6° (F). Pulse 96. Respiration 24.

A urinalysis revealed no abnormalities and a blood Wassermann test was negative.

A roentgenogram of the chest revealed no evidence of tuberculosis, but a minor degree of pneumonoconiosis.

The patient was seen in the clinic several times during the subsequent four weeks. No improvement was noted at these visits, and he was treated symptomatically for constipation and joint symptoms which caused him the most concern. Several abscessed teeth were demonstrated, the extraction of which was recommended.

He became very weak the night following removal of the teeth, and vomited several times. From that time on he was bedridden due to rapidly progressing weakness. Vomiting occurred frequently, lasting several days; anorexia became constant; the voice was husky; and at times he was restless and irrational.

On September 17, 1930, he was admitted to a hospital ward. Examination at that time revealed emaciation and dehydration. The skin was loose and flabby, particularly that of the extermities. General pigmentation was more intense than previously noted, and the face, hands, abdomen, and knees were jet black. A patchy deposit of pigment in the skin of the palms and soles of the feet was particularly striking. Muscular weakness was apparent, and the voice husky. Many musical rales were heard over both lungs.

The blood pressure was 88/65, hemoglobin 77 per cent, red blood cells 4,850,000, leucocytes 10,000. Results of the other laboratory studies were without significance.

For the first few days slight improvement was evident after vomiting ceased and fluids were administered. Thereafter, the course was progressively downward, coincident with profound exhaustion, a gradual decline in the blood pressure, and the development of hypostatic pneumonia and uremia. (Blood urea 274 mg. per 100 c.c.). The usual therapeutic procedures were of no avail, and death occurred eight days after admission to the hospital.

A necropsy was performed two and one-half hours after death. There was no rigor, and antemortem warmth was present. The body was that of a normally developed, emaciated colored man of about fifty years of age. The skin of the entire body was black except that of the palms, soles, and soft palate which showed dark patchy pigmentation. Dental caries and pyorrhea were present. The mucous membranes of the mouth were pale. The costal margins were prominent, and the abdomen scaphoid. The shins were bowed anteriorly but smooth.

The appendix was adherent, but otherwise normal. The liver weighed 1,422 grams and

was slightly congested and pale. The spleen weighed 150 grams and presented the picture of acute splenic tumor. The serous membranes, gall-bladder, and bile ducts were apparently normal. The kidneys were congested; the capsules stripped easily; the left weighed 180 grams, and the right 165 grams.

The left suprarenal gland was enlarged, firm and in normal position; on cut section it had the appearance of a homogeneous yellowish-white rounded tumor which was firmly resilient and had a dense fibrous capsule. The cortex and medulla could not be differentiated. The right suprarenal was not found.

The thoracic viscera were in normal position. The apices of both lungs were closely adherent to the chest wall. The upper lobe of the right lung was dark red and contained several small tuberculous nodules. The middle and lower lobes were normal. The hilus nodes were enlarged and anthracotic. In the left upper lobe there was a small unilocular cavity with necrotic walls adjacent to an area of fibrocaseous tuberculosis. The left lower lobe appeared normal.

The heart weighed 308 grams; the epicardial fat was decreased; the myocardium was brown and atrophic. The calibre of the aorta was less than normal. The valves, endocardium, and coronary arteries were normal.

The stomach and intestines were normal.

The urinary bladder was small and the wall thickened.

Microscopic examination of the right lung showed chronic tuberculous inflammation with areas of caseation; the left lung, subpleural chronic tuberculous inflammation, areas of caseation, subjacent hemorrhage, red hepatization, and early tubercle formation.

The left suprarenal revealed encapsulated tuberculous caseation with areas of calcification. No trace of suprarenal parenchyma was found.

The liver cords were atrophic and pigmented; capillary congestion was moderate. The portal radicles were prominent and infiltrated with round cells. A few areas suggested early tuberculous inflammation.

Tubular degeneration was demonstrated in the kidneys. There was an increase in interstitial tissue, diffuse capillary and focal congestion, and numerous areas of proliferation of the glomerular epithelium.

The spleen showed some congestion and hyaline degeneration of the arterioles.

There was brown atrophy of the heart muscle.

The pancreas was normal.

Comment

A review of the literature reveals the rarity of Addison's disease in the Negro; only three other cases have been confirmed by autopsy. In view of the typical clinical symptoms and signs and the tuberculous process in the gland recovered, we consider a report of this case justified.

Increased pigmentation of the skin, a prominent diagnostic feature of Addison's disease, is in the Negro an accentuation of the normal pigment melanin. Our patient was born a mulatto; hence the change in color was much more striking than would be evident in a pure blooded Negro.

Conclusions

A sixth case of Addison's disease in a Negro is here reported complete with autopsy studies; the rare occurrence is emphasized.

Bibliography

1. Addison, Thomas: A Collection of the Published Writings of the late Thomas Addison, M. D., Physician to Guy's Hospital. Ed. by Wilks & Doldy, London, 1868 [209] 239.
2. Lemann, I. I.: Addison's Disease, *New Orleans Med. & Surg. J.*, 1926, 78, 814.
3. Evans, L. S.: Addison's Disease in the Negro: Report of Three Cases, *Am. J. Med. Sci.*, 1928, 196, 499.
4. Sala, A. M., and Jacobi, M.: Addison's Disease in a Negro: Report of a Case, *Arch. Int. Med.*, 1930, 46, 375.

TRACHEOTOMY: OBSERVATIONS OF NINETEEN CASES, ILLUSTRATED WITH LANTERN SLIDES.*

By ELBYRNE G. GILL, M. D., Roanoke, Va.

The term tracheotomy was first suggested by Laurence Heister, in 1768. Up to this time the operation was called laryngotomy and branchotomy. The first specific description of this operation can be traced back to the early Roman times. We are led to believe, however, that the operation was practiced much earlier than that.

Diphtheria had more to do with the development of the operation than any other condition. The first successful tracheotomy for diphtheria is credited to Bretonneau, in 1825,

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although Home is credited with having performed this operation in a case of croup in 1765. Prior to this time opening of the larynx or trachea was carried out principally for foreign bodies and for intense angina. The work of Bretonneau was quickly taken up by others, among whom was his pupil Trousseau. The indications for this operation were apparently not very well defined, for in many of the earlier works one sees tracheotomy advocated for cases of drowning.

The development of this operation constitutes a fascinating chapter in the history of medicine. Tracheotomy is indicated in all cases of obstructive laryngeal dyspnea. The cardinal signs are indrawing at the suprasternal notch, indrawing around the clavicles, indrawing of the intercostal spaces. The symptoms are restlessness, choking and waking as soon as the aid of the voluntary respiratory muscles ceases in falling to sleep. Cyanosis is a dangerously late symptom and may never occur. These signs and symptoms are not present in dyspnea of cardiac or asthmatic origin.

As a therapeutic measure in diseases of the larynx the place of tracheotomy has been thoroughly established. There are no contraindications to tracheotomy for dyspnea.

The question of when to perform a tracheotomy is as important as the operation itself, for if too long delayed tracheotomy may be performed in vain. This has been known for centuries, yet we see cases where the operation is withheld until the patient can no longer react favorably to the opening of the trachea. The storing up of an excess of carbon dioxide in the blood and the gradual loss of oxygen from the blood and tissues soon bring the patient to a state where his respiratory center can no longer react.

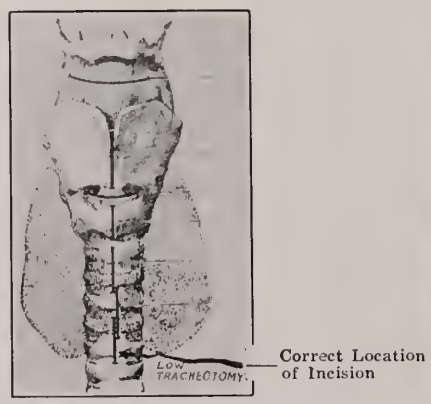

Fig. 1.—Shows location for low tracheotomy.

Anesthesia.—Local infiltration of novocain 1 per cent along the line of incision. Never use general anesthesia.

Technic.—A midline incision dividing the skin and fascia is made from the thyroid notch to just above the suprasternal notch. The cricoid is located and the deeper dissection is continued from below this point. The incision should be through the *third*, *fourth* and *fifth* tracheal rings.

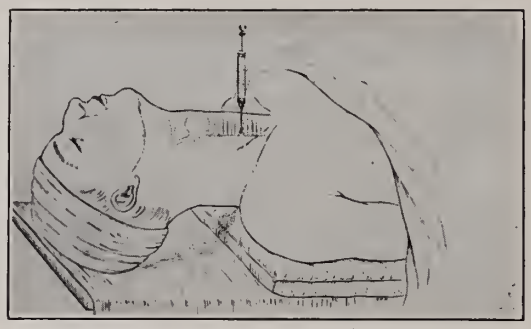

Fig. 2.—Shows correct position for tracheotomy.

Size of Tube.—A tube should not be used if it is larger than one-half the diameter of the trachea. This allows the patient to breathe around the tube and makes decannulation much easier.

The introduction of the bronchoscope is a valuable aid, particularly if you do not have assistance. It gives a definite firm landmark,

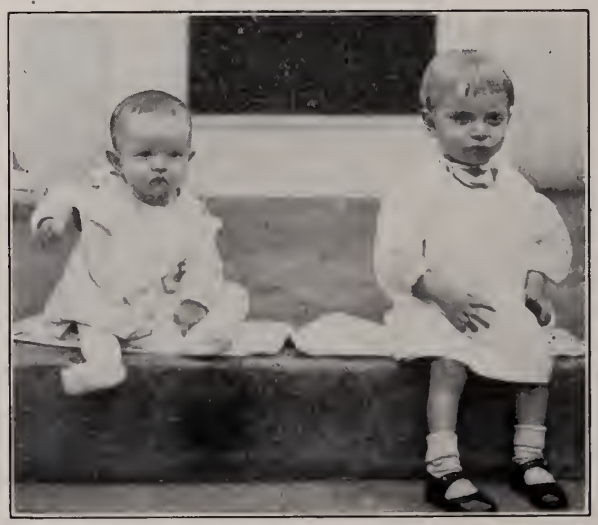

Fig. 3.—Shows three-months-old child with congental stenosis and a two-year-old child with multiple papillomata of the larynx.

Statistical Chart Showing Indications and Results of the Nineteen Tracheotomy Cases.

Age	Sex	Symptoms Duration	Diagnosis	Operation Local General	Size Tracheotomy Tube	Length of Time Tube Worn	Complications	Results	Initials
5 yrs	M	Difficult breathing	Laryngeal diphtheria	Local	No. 1	4 days	None	Recovery	A. F.
5 yrs	F	Difficult breathing	Laryngeal edema	Local	No. 1	5 days	None	Recovery	I. H.
3 yrs	M	Laryngeal dyspnea following bronchoscopy.	Foreign body in bronchus; obstructive laryngeal dyspnea.	Local	No. 1	10 days	None	Recovery	T. R.
13 mo	F	Difficult breathing cyanosis and dyspnea for 48 hours.	Foreign body in bronchus; obstructive laryngeal dyspnea following foreign body aspiration.	Local	No. 1	10 days	Massive atelectasis right lung.	Recovery	E. S.
2 yrs	M	Laryngeal dyspnea	Laryngeal diphtheria.	Local	No. 1	16 months	Laryngeal stenosis	Recovery	J. D. C.
19 yrs	M	Dyspnea	Paralysis of vocal cords following thyroidectomy	Local	No. 3	6 months	Tracheitis	Death elsewhere cause unkown	U.
2 yrs	M	Laryngeal dyspnea 3 days.	Laryngeal diphtheria	Local	No. 1	2½ hours	Laryngeal diphtheria, tracheo bronchitis.	Death	J. D.
19 mo	M	Laryngeal dyspnea	Foreign body in left bronchus.	Local	No. 1	15 days	Atelectasis of left lung.	Recovery	J. D. T.
2 yrs	M	Difficult breathing, 3 weeks.	Papillomata of larynx	Local	No. 1	Approximately 1 year.	Had been treated for diphtheria. Difficult breathing; 3 weeks.	Death at home cauesd by papilloma extending in trachea below tube.	E. Mc.
13 mo	F	Difficult breathing for 5 weeks.	Congenital stenosis of larynx.	Local	No. 1	16 months.	Congenital stenosis of larynx.	Recovery	C. P.
2 yrs	M	Difficult breathing, coughing and choking for 5 months.	Lung abscess.	Local	No. 1	8 days	Gangrene of lung.	Death caused by gangrene of lung.	R. J.
3 yrs	M	Wheezy breathing and coughing for 2 weeks.	Portion of safety pin in right main bronchus.	Local	No. 1	3 days	None	Recovery	W. V.
16 mo	M	Intermittent dyspnea; 12 hrs.	Foreign body in trachea.	Local	No. 1	3 days	None	Recovery	W. M.

STATISTICAL CHART—*Continued*

Age	Sex	Symptoms Duration	Diagnosis	Operation Local General	Size Tracheotomy Tube	Length of Time Tube Worn	Complications	Results	Initials
2 yrs	F	Extreme dyspnea	Laryngeal diphtheria	Local	No. 1	10 days	None	Recovery	G. K.
2 yrs	F	Extreme dyspnea	Foreign body in trachea	Local	No. 1	3 days	None	Recovery	S. B.
12 yrs	M	Coughing and choking for 48 hours.	Foreign body in left bronchus.	Local	No. 2	2 days	None	Recovery	D. H.
2 yrs	M	Extreme dyspnea for 10 days.	Foreign body in bronchus.	Local	No. 1	3 days	None	Recovery	D. W.
2 yrs	M	Dyspnea for 2 hours.	Foreign body in larynx.	Local	No. 1	2 days	None	Recovery	B. P.
3 yrs	M	Laryngeal dyspnea 1 week.	Laryngeal diphtheria	Local	No. 1	4 days	None	Recovery	C. S.

also provides breathing space and prevents the aspiration of blood into the bronchus. When the bronchoscope is passed, however, the operation of tracheotomy is greatly simplified, for an emergency procedure has then been transformed into a deliberate one.

AFTER CARE.—The inner tube must be changed as often as is necessary to be kept clean. The tracheotomy patient cannot talk and should never be left alone. A tracheotomy set with duplicate tubes should be kept in the patient's room. The outer tube should be changed every day.

DECANNULATION.—The tube should be worn until the patient can sleep at least three nights with tube tightly corked.

COMPLICATIONS.—Pneumonia and edema of the lungs are exceedingly rare. Subcutaneous emphysema may occur and is of no consequence unless the wound has been stitched.

The indications for tracheotomy in this series of cases are as follows:

Obstructive laryngeal diphtheria, five cases.

Obstructive laryngeal dyspnea caused by foreign body, six cases.

Dyspnea following bronchoscopy, two cases.

Laryngeal edema following scarlet fever, one case.

Complete paralysis of vocal cords, one case.

Congenital stenosis of larynx, one case.

Papillomata of larynx, one case.

For removal of foreign bodies, two cases.

BIBLIOGRAPHY

1. Tracheotomy: Some Observations and Experiences. By Mervin C. Myerson, M. D., New York. Reprinted from *Annals of Otology. Rhinology and Laryngology*, June, 1930.

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Gill Memorial Eye, Ear, and Throat Hospital.

FRACTURES.*

By M. H. TODD, M. D., F. A. C. S., Norfolk, Va.

You are all perfectly familiar with the usual teachings in regard to fractures; and I shall assume that you have this knowledge, and confine myself in this paper to comments drawn from my own experience.

You must know, in the first place, that I belong to the strictly modern school, the younger generation, in this field. Nearly all of my eighteen years' experience in this line

*Read before the Southside Virginia Medical Society, at South Hill, Va., June 9, 1931.

has been during and since the World War; and all of my work has been in hospitals with full X-ray and operative equipment and staff. I speak, therefore, from a particular kind of experience, especially suited to obtaining good results if they could in reason be obtained. I have had none of the difficulties, often insuperable, that are met with by the general practitioner.

Further still, I have been able to follow end-results for months or for years, and, indeed, have been compelled to follow them, either in the Army, or by the operation of the compensation laws. It is, therefore, from this particular viewpoint that I write the present paper.

There are certain traditions that I wish to mention, in order that I may differ with them.

First, the traditional feeling that it indicates a lack of diagnostic ability, to rely on the X-ray. It was taught for years that a really competent surgeon should rather scorn the aid of the X-ray in making his diagnosis, even when the X-ray was easily available. I have never understood this notion; for, in the first place, there is no one who has not been occasionally surprised when he saw the X-ray of some fracture which he was certain he had diagnosed completely, and was forced to note how different it really was. Secondly, why rely on blind touch when we can use our eyes?

The X-ray enables us to see broken bones, not merely try to feel them through the muscles; and it is purely absurd to deny that the sense of sight is by all odds our most reliable guide in the diagnosis.

I will readily grant that the X-ray may, in the first place, show a distorted view of the break; and, in the second place, it may at first fail to show a fracture when it really exists. I have before now been compelled to postpone a diagnosis until callus actually appeared, as in some fractures of the pelvis; and I have sent a man back to work with a fracture of as easily visualized a bone as a metatarsal, unrecognized on the first film, only to discover the next day that he had not only fracture, but gross displacement, when another film was made.

But such cases are rare; practically always the X-ray gives a very accurate and dependable idea of the actual lesion, and, by comparison, any other method of diagnosis is clumsy and inaccurate.

The second tradition I wish to speak of relates to crepitus; and to say that, in all my experience I have never but two or three times deliberately elicited this sign. I cannot imagine a generally more needless and likely harmful procedure; for it can only be done by causing displacement where none discernible existed before. Why hurt the patient and displace his fracture by such a maneuvre? I formerly had an assistant, trained under the old regime, who could never be satisfied, no matter how obvious the deformity, until he had also obtained good vigorous crepitus by rubbing the patient's bones together. It set my nerves on edge, to say nothing of the patient's.

Again, the tradition of waiting until swelling subsides before reducing the break. The simple fact is that the sooner a fracture is reduced, the less by far will be the swelling.

Another tradition is that healing of fractures takes place in six or eight weeks. This is true only in fractures of the smallest bones, as in children; and it must be recognized that full use of an extremity can be permitted only after a much longer time. If a fractured leg is able to stand the strain of actual work after a period of four months, it may be considered to have healed well. And, in this regard, I wish to state that the follow-up X-ray is the only dependable guide to be used. Many a case of deformity has occurred late after a fracture, because of the too early resumption of full function. The X-ray picks out such cases at once, clearly showing the soft and incomplete union; and follow-up films should never be omitted.

Another tradition that disturbs me is the idea that fractures of the leg and thigh are expected to heal with shortening and some deformity. It is true that certain fractures, oblique or comminuted, will heal with a little shortening; but it need be very little indeed—hardly definitely measurable. In square breaks, shortening should not occur at all, for this means actual over-lapping of the whole bone. Further, in any case, there should be no angulation, even granting a little overriding of oblique fractures; for a change in the line of axis of a weight-bearing bone is a serious thing which may later lead to pronounced static troubles.

The final tradition that I wish to mention is this one, that in compound fractures, such as gunshot wounds, the thing to do is to put in a little drain, or plug, of iodoform gauze.

I feel apologetic at even mentioning this one, but patients have been sent to me in this manner, more than once. Such a procedure, of course, almost guarantees that infection will occur.

Treatment

Having thus registered objection to certain traditions, I wish for a moment to refer to the question of treatment, and to commend the othopedic point of view in this regard. My training has been more in surgery than in orthopedics; but I have been fortunate in training under some very good orthopedists from time to time, and have learned from them the supreme importance of function. A surgeon may chiefly consider the healing of the broken bone; the orthopedist considers the use of the whole member afterward.

I illustrate this matter by referring to the sad cases that I saw in England during the war, of men whose compound fractures of the humerus had been painstakingly made to heal and unite, but whose hands had been retained in splints until they no longer had any useful motion in the fingers; and I watched such cases given vigorous physio-therapy for months, with depressingly little benefit.

It is nothing less than a crime to keep a hand splinted for weeks with the fingers bandaged straight out on a board; yet such splintage is still too often described, and used. It is imperative to recognize that finger motion is very easily lost, and often it is never regained.

It is a similar crime to allow drop-foot and hallux rigidus to occur, as they may do after fractures of the leg.

I do not approve of the radical school that seems to teach motion in disregard of the position of the fracture; but I do know that after a fracture has stuck together, the question of massage and motion are most important. This is especially true of the fractures of the forearm, including the familiar Colles' fracture.

Having spoken of the supreme importance of function, I wish now to make a plea for as nearly an anatomical reduction as can reasonably be obtained under the circumstances; for eventual function is unquestionably much better.

It is necessary to recognize that certain fractures can perfectly well be cared for in the office, or at the patient's home; while others, because of difficulty in maintaining reduction, or from injury to soft parts, can only be treated in the hospital if good results are to be obtained. Fractures of the femur, and compound fractures, should always be classed in this latter group; and the patient should be clearly told that, unless he consents to permit your treatment under these good conditions, the result cannot be as good as it should be.

Most fractures will remain in reasonably good position with ordinary external splintage, casts, and so forth; some require skeletal traction; and good reduction can only be attained in some by open reduction and plating.

The proportion of cases in which I found it wise to plate, in a recent series of five hundred cases of injury to the leg, was less than 10 per cent. Some sort of results could have been attained without this procedure; but only very imperfect ones, compared with the rapidity and certainty of normal healing and function after this operation. The technique of the operation is simple, but exacting; union is speedy and sound, and in suitable cases the results are very far superior to any other method of treatment. I shall not enter here into operative details, but wish to say that exacting technique is imperative.

It is always necessary, in treating any fracture, to remember the injury to the soft parts as well as that of the bone; too much swelling under the deep fascia, from arterial extravasation, may result in Volkmann's contracture or in gangrene; and more than one death from fracture may be laid to this cause. The treatment, imperative when needed, is incision through the deep fascia and relief of tension.

I wish to call attention to the need for supervising fractures during the healing stage; for if they are simply put in casts and let alone, strange things will often happen to the perfectly good reduction you have primarily attained. The soft parts will atrophy and shrink away, and the bones will sag, and, in the end, there will be notable deformity and imperfect usefulness even in the simplest fractures. This is particularly true near the ankle, where the pull of the Achilles tendon is another factor in causing angulation; and it is notoriously true of fractures of the femur, as you are undoubtedly all aware.

In the convalescent stage, physio-therapy is very important; and of even greater importance is the actual functional use of the injured member; preferably not in tedious gymnastics,

but in performing some sort of light work, preferably of an interesting nature,—in brief, occupational therapy. If the employer can create a light job requiring some use of the part, it is vastly the best method of convalescent therapy, and will work miracles in shortening the period of disability and reducing final impairment.

Summary

In treating fractures, good alignment must be obtained; and, as nearly as possible, correct position. The X-ray should be at hand, if possible, and a confirming film should be taken after reduction. This is elementary but often is not done even when the X-ray is available; and only imperfect reduction is the result.

Splintage, especially casts, should be carefully watched for twenty-four hours, and the limb should be highly elevated. It is wise, if in doubt, to split the cast to allow for swelling, though it is not my practice in hospital cases.

Always allow motion of the fingers at the earliest possible moment; do not bandage them out on a board, or they will certainly stiffen.

In compound fractures, hospital treatment and trained surgical judgment will represent the difference betweeen good recovery, on the one hand, and disaster, amputation or even death, on the other.

Active use of the member, when convalescent, is the quickest way of restoring function.

Certain traditions are incorrect, and should be discarded.

Lastly, I write this paper from the viewpoint of a nearly ideal experience as far as equipment and facilities are concerned. The conclusions I have drawn cannot always be applied, I am well aware, in general practice, but I wish to emphasize them where they are possible.

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PREMATURE DELIVERY AND DEATH OF THE FETUS IN SEVERAL CONSECUTIVE PREGNANCIES IN THE SAME WOMAN: CASE REPORT.

By JULIAN M. HOWE, M. D., Washington, D. C.

Has the frequent occurrence of premature deliveries and abortions become so commonplace that we accept them as an established fact of nature about which little in a constructive way to prevent them can be done?

The authors on syphilis and nephritis believe these to be the two main causes of premature birth. Every woman who has a child by a syphilitic husband has a positive blood Wassermann. The old theory of a man transmitting the disease to his child without the mother becoming infected is no longer tenable. The placenta will generally be larger in these cases, and the fetus will show the characteristic syphilitic changes, sometimes even containing spirochete. Generally in cases of repeated abortion, all the information gathered at subsequent abortions will be that the placenta has been large and the amniotic fluid more copious than normal.

Many women with nephritis will pass through pregnancy without much disturbance, but in many, uremic intoxication will occur, headaches, disturbances of vision, vomiting, deafness, epistaxis, albuminuria and edema. The influence of nephritis upon the placenta by small or larger hemorrhages may cause infarction, and the child may die. The placental hemorrhages are dependent upon the condition of the kidney.

Pathologic factors, such as endometritis and metritis, as residuals of septic parturition, as focal infection, teeth, tonsils, sinuses, and one case reported by Curtis, where the husband's apical abscesses were the foci, result in an irritable musculature and a tendency to abortion.

Characteristic changes were noted in accordance with the period of the cycle in the physiology of menstruation, estrus, and parturition; as worked out by Allen and Doisy, Novak, Dixon and Marshall, Long and Evans, and many other investigators. In conjunction with this, vaginal smears, changes in the mammae, vagina and uterus were taken as criteria for the study of the sex hormones, using immature and spayed white rats for this work. Later, this investigation was expanded by determination of the sex hormone concentration of human blood, and the examination of human follicles, corpora lutea and placental tissue obtained from living patients. It was found that the normal sex cycle in primates begins ten to fifteen days after menstruation with ovulation and ends after delivery and involution. The menstrual cycle, therefore, is an abortive mechanism only.

The corpus luteum exerts a regulatory control, since during its presence and activity, the

oxytocic effect of the pituitary secretion of uterine muscle is held in abeyance, but upon its beginning degeneration, the uterine contraction occurs. This explains the periodicity of menstruation and parturition.

The gestational hormone does not have a species specificity, but is identical in lower mammals and primates alike. It is active only as a lipoidal extract, and its activity varies inversely in proportion to the amount of cholesterol present. The water soluble extracts are nearly inactive, as clinical experience teaches. The potency of the lipoidal extracts is measured in rat units; one unit being the minimum amount of the extract necessary to produce the characteristic changes in a spayed white rat.

In the study of spontaneous abortion in the light of these findings, we note that abortion occurs most frequently at the time of the regular menstrual cycle when we would expect the corpus luteum to show its degenerate changes, allowing the pituitary to stimulate the uterine muscle. If, in addition, there is an irritable muscle present, uterine contractions are much more liable to occur. Again corpus luteum would show its degenerative changes earlier than in others. This might be brought about by previous traumatic or toxemic abortion, with the formation of a tendency toward early degenerative change, or it might be merely an individual peculiarity. Conversely, in the presence of such conditions, it might reasonably be expected that the supplying of potent luteal extract would inhibit the pituitary action, and prevent abortion. This view is supported by the findings of Pearl and Surface and Kennedy, who show that injections of corpus luteum inhibit ovulation in fowls and rabbits and that ovulation begins on cessation of the injections.

Uterine contractions of parturition, whether premature or mature, as well as the rhythmic contractions at menstruation, must inevitably depend on a delicate balance between the hormones of the pituitary and of the corpus luteum and placenta. While the gestational hormone is preponderant, the pregnancy proceeds with no contractions. During the latter days or weeks of pregnancy, especially in multiparae, uterine contractions are increasingly noticed. In many cases contractions are noted at each recurring menstrual cycle, and the patient must take great care lest abortion occur, while in some cases the abortion repeatedly occurs. In these cases, if our logic is sound, the corpus luteum is in varying stages of degeneration, and the hormone is insufficient fully to control the pituitary hormone; so the uterine irritability is increased. In those cases where there is hyper-irritability of the muscle due to chronic infection or other causes, the pituitary preponderance need be very slight to result in abortion.

Malformations and malposition of the uterus, extensive lacerations, new growths, and also emotional upsets of which fright is the commonest, may render the uterus incapable of harboring the growing fetus.

The case I wish to report is that of a married white woman, thirty-five years of age, who gave history of eight premature labors—six were born dead, one lived for a few minutes, and one for several hours after delivery.

Family history was negative except maternal grandmother, who died from heart trouble and kidney disease.

Personal history: Has had usual diseases of childhood, infantile paralysis at twelve years of age, which left a slight deformity of right forearm and hand, influenza at twenty-two years of age with normal convalescence.

This woman was well developed with rather large bones, fair skin, light hair and blue eyes. The muscles of the right forearm and hand were smaller than those of the left, and there was noticeable difficulty in extending the fingers. Pelvic examination revealed the vaginal outlet to be normal; uterus, tubes, and ovaries were also normal in size and position, and not tender to the palpating hand. Physical examination, otherwise, was not remarkable. Wassermann reaction negative. Urine examination negative.

In the spring of 1928, she again became pregnant. Glandular therapy was begun at about the second month and she was given an ampoule of corpus luteum intramuscularly every week up to the sixth month. It then became inconvenient for her to come to the office and one five grain tablet of corpus luteum was given by mouth three times a day. She was advised to take extreme care in her daily habits and to exercise moderately.

At seven months and two weeks' gestation, a gush of blood, followed by continued bleeding, sent the patient to the hospital where a partial placenta previa was noted upon exami-

nation. The cervix was partially dilated so that by breech extraction, a baby boy was delivered, who is still alive and well. I believe that the possible changes in the uterine muscles, following infantile paralysis and lack of proper glandular functions were responsible for these premature labors and foetal deaths, and that the administration of glandular therapy or the pathological premature delivery was responsible for this living child.

References

Journal of the Oklahoma State Medical Association, 21:212-214 (August), 1928.
Nederl. Tijdschr. v. Geneesk. Amst., 2:1845, 1919.
The Boston Medical and Surgical Journal, 193:116-119 (July 16), 1925.
British Medical Journal, London, 1:632-634, 1920.
American Journal Obstet., N. Y., 76:571-583, 1917.

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GALL-BLADDER DRAINAGE BY DUODENAL INTUBATION.*

By VERNE S. CAVINESS, M. D., F. A. C. P., Raleigh, N. C.

Historical

Following the original work of Einhorn and Meltzer demonstrating the possibility of duodenal intubation, B. B. Vincent Lyon, of Philadelphia, began an investigation of the clinical potentialities of such a procedure, especially for gall-bladder drainage.

Lyon demonstrated that there are three types of bile obtainable by duodenal drainage, viz.; A, B, and C bile. He also has developed a practical technic for drainage.

Martin E. Rehfuss, of Philadelphia, has also done a great deal of investigative work. It now seems to be definitely established that gall-bladder drainage by duodenal intubation has a definite place in medicine for diagnosis and also for therapy in selected cases.

Indications and Contraindications

Conservatism is highly important in the use of duodenal intubation. A correct diagnosis may not be made without careful correlation of all available clinical data with the findings in the bile removed by drainage, nor may a cure be expected in all cases of gall-bladder disease treated by this method.

Cholecystitis and cholangitis often yield readily to treatment by duodenal intubation, but even in these cases, failures occur occasionally. Acute cholecystitis yields much more readily than chronic cholecystitis, but in chronic cases very satisfactory results are often obtained.

Cholangitis, with or without acute catarrhal jaundice, yields to duodenal drainage more readily than cholecystitis. In general, while several drainages may be required before any signs of improvement are noted, recovery usually follows a few treatments.

Cholelithiasis and empyema are definitely surgical conditions, and very little is to be expected from duodenal intubation,—either diagnostic or therapeutic.

At times, a small stone producing an obstructive jaundice can be dislodged by duodenal intubation and the jaundice relieved. However, in general, cholelithiasis and empyema of the gall-bladder may be regarded as belonging strictly within the realm of surgery.

In the field of diagnosis, duodenal intubation serves a useful purpose in determining the type of bile recovered and the identity of the infecting organism.

A bile, which is secured first, is very small in amount, being only about the 10 c.c. the common and cystic ducts can contain. From a diagnostic standpoint, it is of very little value. B bile comes from the gall-bladder where it has been concentrated about 10-1 and has mucus mixed with it. It is dark in color and its cytological and bacterial examinations indicate the probable condition in the gall-bladder. C bile comes directly from the hepatic ducts. It is very thin and pale yellow in color.

Technic

Swallowing the Tube. Any duodenal tube with a tip of any type may be used. The patient may be in any comfortable position.

The only preparation of the patient that is necessary is a fasting stomach. If desired, atropine sulphate gr. 1/100 may be given, either by mouth or hypodermically, one hour before passing the tube. The pharynx may be sprayed with 5 per cent procain solution if it is too irritable for the patient to swallow the tube.

The patient swallows the tube to the first (40 cm.) mark. If necessary, a stylette may be used. The patient should then lie on the right side and swallow 1 cm. of the tube every few minutes until about 65 to 75 cm. of the tube, depending on the size of the patient, has been swallowed. If the tip does not pass the pylorus during this procedure, it probably will pass within a few minutes.

*Read before the Wake County Medical Society, September 13, 1928, and before the Wilson County Medical Society, September 10, 1930.

The patient should lie on the right side until the flow of bile is definitely established.

Proof That the Tube Is in the Duodenum. Except in obstructive jaundice, it is easy to demonstrate that the tip is in the duodenum. So soon as the olivary tip reaches the ampulla of Vater, a flow of A bile, undiluted by gastric secretion, is likely to begin.

In case there is no flow of bile, but it is thought that the tip is in the duodenum, there are several methods by which its location can be determined.

One method consists of making gentle traction on the tube; if the tip be in the duodenum, a tugging on the lower end of the tube should be felt.

If the gastric content was acid, the secretions thought to be from the duodenum, should be alkaline.

Air injected through the tube gives a gurgling sound when heard through the stethoscope on the abdominal wall. If the tip be in the duodenum, the sounds will have a higher pitch than if in the stomach.

A fluoroscopic examination is often useful in determining the location and position of the tube and tip; however, this is rarely, if ever, necessary except with workers who are inexperienced.

A good flow of undiluted bile is the best proof that the tip is in the duodenum.

Drainage. Unless there be a complete obstruction of the common or hepatic ducts, so soon as the olivary tip reaches the ampulla of Vater and causes a relaxation of the sphincter Oddi, bile is likely to begin flowing.

Drainage should be secured by the siphon method rather than by syringes or aspiration bottles. If too much suction be applied, only harm can occur. If bile can get into the duodenum, it can easily be siphoned out through a tube.

In case the flow of bile does not begin within a short time after the olivary tip is at the ampulla of Vater, a few cubic centimeters of air injected through the tube will often serve as ample stimulus to start the flow.

Various solutions are often effective to start a flow when injected through the tube. Magnesium sulphate is used more extensively than any other solution. However, sodium sulphate, sodium chloride, sodium bicarbonate, peptone solution, sodium phosphate, citrate of magnesia, 2/10 per cent hydrochloric acid and many other substances have been used and found effective. Apparently, all these substances act by relaxing and relieving congestion in the inflamed mucus membrane of biliary ducts.

Cultures should be obtained under as aseptic conditions as possible. They may be collected either before or after injecting magnesium sulphate, and after injecting some of the other solutions commonly used; in general, it is probably preferable, whenever possible, to collect bile for cultures before making injections. Bile, itself, is a good culture medium and, if kept at about 37° C., need not necessarily be transferred to other culture media for some hours.

Drainage should be continued so long as A and B bile are obtained and until C bile flows freely.

Therapeutic Results

When gall-bladder drainage is used for diagnostic purposes, very little, if any, therapeutic result is to be expected.

In simple catarrhal jaundice, from one to three or four drainages may be expected to yield a good flow of bile, affording a rapid recovery from jaundice.

Chronic catarrhal cholecystitis is at times considered to be a surgical condition, and, by means of surgery, good therapeutic results may be obtained. However, in chonic cholecystitis, if for any reason surgery is not applicable, duodenal intubation can be made to give very satisfactory results if drainage be performed properly and repeated sufficiently often.

In acute cholecystitis several drainages are likely to be necessary. A single drainage often affords immediate relief, but unless the treatment is repeated within a few days, the symptoms are likely to become aggravated. It is probable that in a majority of cases a complete cure can be effected by this means of treatment.

In the treatment of infection of the biliary passages it is impossible to rely on any one method of treatment. There are many things that must be considered. Prime among these should be mentioned the source of the infection. Unless the source of the infection is removed, reinfection will be prompt. The general hygiene of the patient must receive careful attention. Elimination, diet, and habits of life, all play an important part and must

be corrected and adjusted to meet the needs of the individual case.

Outlook

Bacterial cultures from B bile may show no growth. Concentrated bile inhibits bacterial growth. Growth is obtained from B bile which is thin and has not been concentrated. It may contain tinges of blood and often is slightly purulent in character.

The organisms most often found are bacillus coli, staphylococci, and a specific strain of streptococcus which appears to attack the gall-bladder whenever present in the body. Also Vincent's organisms, typhoid bacilli, influenza bacilli, amoebae, streptococci, especially the hemolytic strain, pneumococci, micrococcus melitensis, bacillus pyocyaneus, bacillus enteritidis, Vibrio cholerae Asiaticae, and tubercle bacilli, are causative at times.

Autogenous vaccines, made from cultures of B bile obtained by duodenal intubation, give excellent results in many types of infection. Stock vaccines are not so satisfactory.

An increase in cholesterol crystals in bile associated with an increase in blood cholesterol is very suggestive of gall-stones, either present, being formed or about to be formed. From a therapeutic standpoint, such information is of very little value, its value resting on the side of diagnosis.

Conclusions

Extensive studies and research have demonstrated the value of gall-bladder drainage in selected cases:

1. For diagnostic purposes.
2. Therapeutic—
   (a) In simple acute catarrhal jaundice.
   (b) In cholangitis.
   (c) In chronic catarrhal cholecystitis.
   (d) Occasionally in cholelithiasis.

818 *Professional Building.*

INVERSION OF THE UTERUS: REPORT OF A CASE.

By J. M. WHITFIELD, M. D., Richmond, Va.

Inversion of the uterus is a rare and serious complication of labor, coming on immediately after delivery or sometime later, its occurrence having been delayed as late as the fifth day. Concerning the incidence of the condition one is impressed at the wide variation quoted by different authors. Williams quotes results of two writers who state the condition as having occurred once in 250,000 and once in 191,000 deliveries. It is probable that many obstetricians have never seen a case or have met with only a few examples of this complication. However, inversion is without doubt more common in the practice of ignorant midwives than one would believe from the figures given above.

The inverted uterus has been aptly described as "upside down and inside out." In its production many causative factors have been enumerated, among these being forcible expression, manual removal of the placenta, traction of the cord, etc., but many authors believe that its spontaneous production is quite as frequent as when these extraneous factors are concerned. Indeed, it is hard to account for the accident unless we assume faulty enervation or thin walled uterus with fundal attachment of the placenta.

The symptoms of the condition may be most alarming, with shock and profuse hemorrhage, followed quickly by a rapid exodus. Here again the picture may vary markedly and present few if any unfavorable omens until later, or the condition may become chronic and necessitate "later operative procedures." As would be expected the prognosis is dependent upon the symptomatology and treatment given. Conservatism is here absolutely necessary in the proper management of the case, any and all operative measures being contraindicated in the presence of severe shock which only too frequently supervenes. There are those cases, however, which may and should have prompt replacement or other surgical means employed. We find the mortality as quoted variously between 14 and 25 per cent but these figures can hardly represent the much more grave outlook ahead of the unfortunate woman in unsuitable surroundings and dependent upon ignorant and unskilled attendants.

The patient Mrs. R. G., entered the obstetrical service of a local hospital February 18, 1931. She was seen by me two hours later and the following data secured. The patient was a married woman of twenty-two years, in labor, had had no previous pregnancy, and was apparently in fair condition except that the pulse rate was rapid (140). She stated that her pains had started on the preceding day (about 9:00 A. M.) and had continued until her doctor had advised her to come to the

hospital. Her pains were, and had been, of very poor quality. Examination at this time showed the fetal heart to be good, the blood pressure was normal and a rectal examination revealed the cervix to be only very slightly dilated. As the patient was doing well except that she was fatigued out of proportion to the time in labor and type of uterine contractions she was having, I ordered that she be given small doses of morphine and hyoscine and that proctoclysis of 5 per cent glucose be started.

During the rest of the afternoon and night following she rested nicely between uterine contractions which continued to be ineffectual and of very poor quality. Accordingly, on the following morning when it was found that practically no progress had been made, I determined to attempt delivery as soon as possible. A No. 5 Voorhees bag was inserted and weighted. We were agreeably surprised to have the bag expelled in about thirty minutes and a vaginal examination now showed the head still high in the pelvis with the uterus almost in a tetanic condition. A version was attempted under deep ether anesthesia but it was found necessary to give 1 c.c. of adrenalin before this could be accomplished. The extraction was somewhat difficult and forceps were applied to the aftercoming head. The baby now appeared to be in good condition and promptly started to breathe.

We now waited about thirty minutes for the delivery of the placenta. There was no bleeding and as the placenta did not seem to be forthcoming we proceeded to repair the episiotomy done before the delivery. After completing this, as the uterus was quite relaxed, a small dose of pituitrin was given and the uterus was very gently massaged. For a minute or two I could scarcely palpate the uterus and then a contraction seemed to be starting. The uterus now became hard in my grasp and suddenly disappeared from the abdominal cavity, as a large mass with the placenta attached protruded from the vagina. The condition was immediately recognized, the placenta was detached with difficulty as it was somewhat adherent, and I attempted to replace the uterus. This could not be done until ether was again started and the patient slightly relaxed. After putting the uterus back in place, a tight uterine pack was introduced to control the now rather free hemorrhage and she was returned to bed in very satisfactory condition. The packing was removed in twelve hours and the patient made an uneventful recovery, her temperature being within normal limits continuously save on the third day when it reached 101 F. and then dropped again to normal.

A vaginal examination done on the eleventh day after delivery showed her condition as good, the uterus being freely movable, anteflexed, and involuting properly, with the cervix intact. On the following day patient was discharged from the hospital with her baby, both in good condition. As the patient resides in a nearby city I have been unable to get her to come back for the customary check up at six weeks, but so far as I know she is and has been doing well.

Professional Building.

ANEURYSM OF THE AORTA.*

By JOSEPH F. ELWARD, M. D., Washington, D. C.

Aneurysm of the aorta occurs frequently enough not to excite great comment. The case here reported presents more or less unusual complications. It is deemed worthy of a place in the literature.

Case Report

C. McC., white, male, aged 48. Occupation, tin and sheet metal worker. Weight 130 pounds.

Physical examination by Dr. John J. Lynch.

Family History irrelevant.

Past History: Usual diseases of childhood. Influenza 1918. Venereal history denied. Has always been well and able to follow occupation of sheet metal worker.

Present Illness: November, 1929, developed a cough with dyspnea on exertion, began to lose weight, had sweats, felt feverish at times, usually late in the day. Voice became husky. Some feeling of oppression in chest, but no pain, raises thick sputum.

Physical Examination: Well developed, poorly nourished white male, weight 130. Eyes, ears negative, nose deviated septum. Throat, tongue coated, teeth poor. Tonsils small and deeply imbedded, no pus. No pulsations in the neck. Chest expands equally on both sides, with possibly a slight lag on left. Heart showed no palpatory thrills, apex beat in fifth interspace in nipple line. Percussion dullness increased to the left. No murmurs nor bruit

*Read before the Washington Medical and Surgical Society, March 23, 1931.

Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Non official Remedies:

Elixir No. 229 Ephedrine Sulphate 2 grains.—It contains ephedrine sulphate—Lilly (New and Non-official Remedies, 1931, p. 177), 0.44 Gm. in 100 c.c. (2 grains per fluid ounce), in a menstruum composed of alcohol, glycerin, sucrose and water, with flavoring agents. Eli Lilly & Co., Indianapolis.

Ventriculin, 100 Gm.—Each bottle contains 100 Gm. of ventriculin (New and Non-official Remedies, 1931, p. 238). Parke, Davis & Co., Detroit. (Jour. A. M. A., August 8, 1931, p. 391).

Accepted Devices for Physical Therapy

The following have been accepted by the Council on Physical Therapy of the American Medical Association for inclusion in its list of Accepted Devices for Physical Therapy:

Eveready Professional Model Carbon Arc Lamp.—It is designed for general radiation therapy in physicians' offices or clinics. The lamp is mounted on a large rugged stand, equipped with rubber wheeled, ball bearing casters which permit the lamp to be moved easily over the floor. The Professional Model is designed to operate on 115 volt, 60 cycle, alternating current circuit through a standard outlet (base plug or wall plug). The lamp is claimed to offer three distinct types of therapeutic radiation, namely, infra-red, visible, and ultraviolet. National Carbon Company, Inc., Cleveland, Ohio. (Jour. A. M. A., August 15, 1931, p. 462).

Eveready Solarium Type Carbon Arc Lamp.—It is designed to administer therapeutic light treatment simultaneously to groups of patients. The lamp is designed to be attached to the ceiling. The length of the unit is approximately three feet and the width and depth depend on the number of units included in each lamp. It is claimed that the lamp provides a source of therapeutic artificial sunlight for group irradiation, the ultraviolet content being much richer than that of natural sunlight. National Carbon Company, Inc., Cleveland, Ohio. (Jour. A. M. A., August 22, 1931, p. 541).

Propaganda for Reform

Use of Cinchophen and Neocinchophen.—In consideration of reports of untoward effects, it would be well to discontinue the use of cinchophen and to substitute neocinchophen for it. Even though neocinchophen owes its activity to cinchophen, it is so slightly soluble as to be almost tasteless, devoid of irritant action on the stomach, and of remarkably low toxicity. If cinchophen is prescribed it should be under its pharmacopeial name and not as "Atophan," which is more expensive and is marketed with unwarranted claims. If Neocinchophen is wanted it should be prescribed under this name and not under the uninforming designation "Tolysin." In view of the serious though rare poisoning from ordinary doses of cinchophen, the use of this drug should be restricted as much as possible to cases in which other non-narcotic analgetics, such as salicylates, acetysalicylic acid or amido-pyrine, have been tried and failed to give adequate relief, and in which the suffering is sufficiently great to justify the risk. (Jour. A. M. A., August 8, 1931, p. 409).

Cultivation of "Common Cold" Virus.—The growing conviction that "common colds" are not due to any micro-organism thus far included in commercial vaccines, but to an unknown filtrable virus or group of viruses, is strengthened by the currently reported successful cultivation of bacteria-free pathogenic nasal filtrates. The work indicates conclusively that the filtrable agent associated with "common colds" multiplies or is multiplied in the embryonic tissue medium. (Jour. A. M. A., August 15, 1931, p. 466).

Arsphenamine and Neoarsphenamine.—Comparisons of the therapeutic value of arsphenamine and neoarsphenamine must take into account the difference of arsenical content, which is one-third higher in the case of arsphenamine than in the case of neoarsphenamine. Even allowing for this difference, it is quite generally conceded that arsphenamine as such is therapeutically the more effective than neoarsphenamine. The evidence for the efficiency of neoarsphenamine is conspicuously small. The most carefully investigated and reported clinical material has been treated with arsphenamine rather than with neoarsphenamine. One of the characteristics of neoarsphenamine, which will affect any attempt to estimate its gross clinical value, is the marked variability between different lots of the preparation even from the same manufacturer. (Jour. A. M. A., August 15, 1931, p. 480).

Disinfectants.—In combating contagion, modern sanitary practices have eliminated disinfectants for spraying walls, ceiling and floors of school rooms. The source of infection is the individual; so long as the infected individual is present in the room, any disinfectant that might be used on the walls or the floor would be of little if any value in preventing infection. Removal of the infected individual usually suffices to end the danger of spreading the infection. Soap and water is the best agent for cleaning floors, together with plenty of fresh air and sunshine Terminal disinfection, such as fumigation with formaldehyde, has been generally discarded as valueless In the case of lavatories, urinals and toilet bowls, so-called germicides in reality accomplish nothing except covering up the primary odor by the stronger odor of the chemical used. "Disinfection of hands" may be obtained by a thorough scrubbing with soap and water. In laboratories in which pathologic material is being handled, a solution of mercuric chloride or a solution containing "compound solution of cresol" may be employed. (Jour. A. M. A., March 28, 1931, p. 1098).

Norman Baker's Radio Station KTNT—Norman Baker, of Muscatine, Iowa, is known to the medical profession chiefly because he blackguards the profession and because he exploits alleged cancer cures as part of his many commercial activities. He is suing the American Medical Association for half a million dollars for alleged libel. Not long ago, Norman Baker applied for a renewal of his broadcasting license for his station, KTNT. The Chief Examiner for the Federal Radio Commission, recently filed with the Commission his report recommending that the license be not renewed. It is reported that the Commission extended the license until April 30, 1931, pending final decision. (Jour. A. M. A., April 4, 1931, p. 1167).

Medical Economics and Medical Business.—For some time physicians have been receiving regularly and complimentary a publication known as "Medical Economics: the Business Magazine of the Medical Profession." The contents of this periodical are devoted largely to the problem of making money out of medical practice. It is apparently little if at all concerned with medical ethics or medical ideals. The vast majority of its space is devoted to the advertisements of products of many manufacturers whose preparations could not possibly be passed by the Council on Pharmacy and Chemistry. Even those manufacturers who cooperate largely with the Council, find in this alleged medical publication an outlet for the announcements of their products that the

Council will not accept. (Jour. A. M. A., April 25, 1931, p. 1404).

Refined Antipneumococcus Serum.—Since the discovery of the etiologic relationship of the pneumococcus to pneumonia, the search for an effective antipneumococcus serum has continued unabated. Little progress was made in this direction until 1913, when the biologic classification of pneumococci, by Dochez and Gillespie, provided a rational basis for modern serum therapy in this disease. Reports on the use of refined and concentrated serum preparations bring evidence showing that a considerable reduction in the mortality rate of type I pneumonia is secured by the use of these preparations. Experiments with the type II pneumonia and particularly types III and IV, were not favorable to the use of preparations representing these types. In conformity with the evidence, the Council on Pharmacy and Chemistry accepts antipneumococcus serum representing type I, but does not accept serums representing other types or mixtures of all types, holding that type I serum alone is worthy of clinical trial. (Jour. A. M. A., May 2, 1931, p. 1505).

Old Tuberculin in the Treatment of Tuberculosis.—Koch reported tuberculin to the profession, in 1890, and it was hailed as a specific remedy; unfortunately, it was administered in a somewhat reckless way by inexperienced clinicians, and the disadvantages soon resulted in widespread condemnation. Tuberculin is not a selective curative remedy in the treatment of tuberculosis. It is not a specific. It should not be used by general practitioners in routine office practice, but by specialists in the sanatorium or home where there is careful clinical supervision of the patients. (Jour. A. M. A., May 16, 1931, p. 1720).

Limitation of the Manufacture of Narcotic Drugs.—In accordance with the provisions of the Hague convention of 1912, Congress made laws for controlling and regulating the production of and the traffic in the drugs mentioned by the convention. Now domestic production and traffic in these dangerous drugs is limited by Federal law. The importation of opium and coca leaves into the United States is restricted. The enforcement of the laws have, however, not prevented the importation of drugs for illicit uses. Introduction of narcotic drugs by smugglers cannot be prevented until other countries control the manufacture and export of narcotic drugs adequately. To this end our government initiated the movement which resulted in the calling of the International Opium Commission, at Shanghai, in 1909, and since then has continued in its efforts along these lines. The manufacture of narcotic drugs must be limited to approximately medicinal and scientific needs. Physicians must aid in the determination of such needs by limiting their own prescribing to indispensable uses. The pitiful character of the drug addict and the association of drug addiction with crime and other menaces to the public welfare demand all the help that physicians can give in solving this problem. (Jour. A. M. A., May 9, 1931, p. 1623).

The Censorship of Medical and Dental Advertising.—One of the primary reasons for the establishment of the Council on Pharmacy and Chemistry of the American Medical Association in 1905 was the desire of the editor of The Journal of the American Medical Association for scientific advice concerning claims made by advertisers for proprietary remedies. The Board of Trustees of the American Medical Association give the fullest support to the Council by refusing space in the advertising pages of publications of the American Medical Association to advertisers of proprietary remedies who failed to meet the Council's requirements. With that support the Council has made its work and its name respected. The advertising pages of the publications of the American Medical Association and of the state medical journals that cooperate afford a striking contrast to the pages of the *British Medical Journal* and of the *Lancet* (London), which exercise a so-called censorship without, however, having behind the censorship the type of scientific study and control represented by the Council on Pharmacy and Chemistry. The Council on Dental Therapeutics of the American Dental Association began its work with high ideals and with enthusiasm. In 1930, the trustees of the American Dental Association adopted a resolution to place the association squarely behind the Dental Council in its efforts. Then, at the midwinter session of this association, held in February, 1931, the board of trustees practically reversed its previous action, placing the business manager of the periodical in a position of judgment over the council and making him arbiter as to whether or not the criticisms of the council shall be referred to the manufacturer. Without the power of the trustees of the American Dental Association and the periodical of the association whole-heartedly behind its work, the Council on Dental Therapeutics will be ineffective. (Jour. A. M. A., May 16, 1931, p. 1697).

Ephedrine In Narcolepsy.—The use of ephedrine sometimes results in sleeplessness. Whereas, this effect might contraindicate the use of ephedrine in some circumstances, it has seemed to indicate its utilization in others. For instance, ephedrine has been found effective in counteracting the results produced by some of the barbiturates and of morphine. Ephedrine has also been used in the treatment of narcolepsy and its related phenomenon, cataplexy. (Jour. A. M. A., May 9, 1931, p. 1626).

Book Announcements

Simple Lessons in Human Anatomy. By B. C. H. HARVEY, M. D., Professor of Anatomy, University of Chicago. Chicago, American Medical Association. 1931. Octavo of 434 pages. Illustrated. Cloth.

Dr. Morris Fishbein states that this is perhaps the first popular treatise on anatomy made generally available, fully illustrated, and at the same time authoritative.

Planning Lunches for School Children. Of special value for parents, teachers and nutritionists. Both are published by the Evaporated Milk Association, 203 North Wabash Avenue, Chicago.

The Adventures of Eva, Pora and Ted—a comic strip collection, copies of which may be had upon request to the publishers.

Tables of Food Values. By ALICE V. BRADLEY, B. S., Supervisor and Instructor of Nutrition and Health Education. State Teachers College. Santa Barbara, California. The Manual Arts Press. Peoria, Illinois. 1931. Octavo of 128 pages. Cloth. Price, $2.00.

Virginia Medical Monthly

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Editorial

Failures of School Children.

No editorial comment could bring to the practitioners of the Medical Society of Virginia more forcefully the need for cooperation with the State Board of Health, in the matter of the health of the school child, than the subjoined testimony of the various speakers at the recent meeting of the Virginia Public Health Association, held May 14, 1931.

Let the doctors of Virginia note what these speakers brought out and think on these things!

DR. S. B. HALL, State Superintendent of Public Instruction, listed the main causes of failures in school as (1) Teacher does not know the child's mental, moral or character age. (2) Physical handicaps.

"Failures are too expensive to be allowed to continue. Last year 28,482 Virginia pupils failed to pass their grades, and will have to repeat them. It costs $35 a year for each pupil in the elementary grades; $65 for each High School student—an average of $50 per pupil—making a total of over a million dollars Virginia is spending each year that can be saved with proper management."

MISS LESLIE FOX, Rural Supervisor, Warren County, Virginia, stressed the teacher's part in preventing failures, outside of the faults that might be in the teaching process. The annual physical inspection by the teacher shows the main defects that need correction. The teacher can by various devices arouse a pupil's desire to be physically fit to do his best class work, and by showing a real interest, often persuade his parents to have their family physician look him over and give or advise any treatment found needed.

MRS. W. A. ROSE, King George County, a rural mother of school children, emphasized the parents' need of closer contact with the Child Health Program in order that they may sooner be educated to the point of realizing how many failures would be prevented by the elimination of defects at the beginning of their children's school life.

This closer contact can be brought about through better cooperation between family physician, parent and teacher.

Parents should have an intimate part in school clinics, examination by the family physician, etc. It is noticeable that the average parent becomes more intelligently interested in such activities with each experience.

On these occasions the family physician is helping to give the parents that education in their children's needs which the teacher has inspired them to ask, and which will encourage them to further efforts along these lines. At the same time the physician is gaining, through such interested parents, a vision of the importance of this work.

DR. W. F. DREWRY, Director Bureau Mental Hygiene, Richmond, spoke on The Emotional

Disturbances of the Failing School Child. "Whether the emotional disturbance (not mental deficiency, as that is a subject requiring separate consideration) is the chief causative factor in the child's failure to make his grade, or whether the failure to make his grade caused the child's emotional upset, are matters of sufficient importance to receive the attention of both the physician and the teacher, as well as the parent.

"Emotional disorders in the school child may come as a sequelae of a brain injury, encephalitis, or some infectious disease, or to endocrine disorder, changes incident to puberty, etc.; or the emotional disturbance may be the effect of excessive efforts incident to school work, insufficient nutrition, sleep, play, and the like.

"Hygiene of the child's mind, and special attention to his emotional state, are as important as the condition of his body. Both constitute joint studies for doctors interested in child health and welfare, for the classroom teacher, the visiting teacher, the school nurse, the social worker, the psychologist and the neuropsychiatrist."

Dr. W. B. Hill, a rural physician, Rectory, Stafford County, Virginia, said: "What part will the doctor play in readjusting the maladjusted school child? The ultimate aim is to create a new family doctor. The old doctor had everything we want in the new doctor except a modern view and the use of prophylaxis rather than waiting to cure. He will have to be educated. The persons to educate the doctor are the families that he treats. The doctors will be educated when the intelligentsia realize that prevention is more valuable in dollars and cents than medicines or prescriptions.

"Would it not be well to have a questionnaire to be filled out jointly by the mother and the teacher, and then taken to the family physician? Thus all three might know the child's health habits and the history of any abnormal symptoms, either physical or emotional. The physician should then examine the child from tip to toe. He will thus often find little things that may easily cause nervous and other disturbances."

Dr. W. B. McIlwaine, Petersburg, Virginia, President Pediatric Society, had for his subject *Health Habits of the Failing School Child*, and said in part: "Heredity, environment, poor physical condition, poor mental calibre, poor health habits, and public school failures are usually a part of the same picture—one of ignorance and poverty. From such conditions comes a poorly kept, under-nourished, overstimulated, fatigued child, with definite physical imperfections.

"The above applies to a large majority of the failing children in our schools; but what of the children here and there who have apparently a parentage and environment conducive to at least passing the work of our public school system? In these children bad health habits are certainly a predominating factor in their failure; but after all, if we analyze the reason for their bad habits what do we find? Is it the child's fault if he is allowed to stay up till eleven and twelve o'clock and is tired out the next day? Is it the child's fault that he is not taken to the dentist, or does not eat the proper diet? Is it the child's fault that he fails to study? No, we must place the blame where it belongs, on the parents and the environment those parents make for their child. We physicians are entirely too mealy-mouthed towards most parents—that's where our work must concentrate. Educate the parents to the value of proper environment and health habits to the school work of a child, and we shall have fewer failures by far."

Dr. A. T. Finch, Chase City, Virginia, representing the Medical Society of Virginia, named three causes of failure of the school child—mass illiteracy, lack of county informative effort, and lack of evaluation and cooperation by physicians. "The lack of evaluation and cooperation by the family physician is one of the main obstacles to prevention of failures due chiefly to physical handicaps. Sometimes it is difficult for physicians to see the real value of carefully examining well children. Where such examinations have been made, statistics show that many defects have been found, and when these defects have been corrected, the children have developed into good students. Hence we realize that every child between the ages of six months and six years should be examined semi-annually by his family physician and family dentist to find and correct the beginnings of any defects, and thereby prevent much sickness and retardation at school. We further realize that no child should be obliged or allowed to enter school suffering from any removable handicap. To carry out this work, we family doctors must

catch a real vision of the value of child welfare work. We must render enthusiastic aid to the organized agencies. We must help with all our might in reaching and extending a helping hand to mothers and children to assist them into the light of health education. The 90,000 children annually entering school need our help to profit by their advantages. If we doctors will learn to give our best efforts to the fifteen point standard Pre-School Child Examination the results will be so outstanding that parents will recognize its full worth and these little patients will be brought to our offices at least once a year for the early recognition of things which later may produce sickness and much loss of time at school."

In order to really put this work over, in the most helpful manner, we need Organized County Effort, best emphasized in the Welfare or County Health Unit. This unit will be able to contact the mothers and children in the remote places, and by their sympathy and interest will be able to teach and demonstrate to the mothers, the real need and the real benefit to be derived by having the well school child examined and when defects are found to persuade them to have these defects remedied. This Unit in conjunction with the teachers, can do so much to help these unfortunate children to become some of the brightest and best pupils in the schools, as well as real assets to their homes and communities.

Dr. B. B. Bagby, President of the Association, in summing up the discussion said: "You have heard the failing child ably discussed by representatives of professions most interested in children. We all agree that it is the duty of the health workers and the teachers to convince the parents that at least an annual examination of each child and correction of defects perhaps just starting, will save trouble, money, and go far towards preventing failures in school; that it is the duty of the physician to carefully examine each child and supervise his development, and that the results will be in direct proportion to the part that each plays in this program.

"The enormous waste of the State's money in caring for repeaters in the schools must be stopped in some way; the best way is through the full cooperation of the Department of Education, the Department of Health, and the family physicians.

Considering Complications of the Diabetic Patient.

Pathology may be in the making in the diabetic after a few years. Few there are, after the fourth or fifth decade, that do not show a wide range of pathologic change. The symptoms of the malady affect varied parts of the body and they are but tokens often of complicating pathology. The trail of morbid growth may be followed as one attends through months and years a given diabetic case, or the varied assortment of symptoms, arising in various systems of the body, in the diabetic patients, as they come to hand, combined to indicate the widespread complications to be found in this disease. Murphy and Maxon* note the complications in a study of some 827 cases. They found that of the 827 cases of diabetes studied, 146 exhibited no complications but that in the remaining 681 cases there were one or more associated diseases. In this group of 681 with complications, 428 died. They found or assorted seventy-five complicating diseases which they tabulated in a group of fifty-two specifications. They grouped these complications under the following heads: (1) Diabetic Coma; (2) Cardiorenal Vascular disease; (3) Infections; (4) Tuberculosis; (5) Carcinoma; (6) Syphilis; and (7) Miscellaneous.

Diabetic coma as a complication is an imminently grave one. Practitioners formerly were forced to fear this complication as the most formidable one, but now through modern treatment, as secured in hospitalization, weighed and balanced diets and insulin administration, diabetic coma is more or less successfully prevented or relieved. Nevertheless, conditions prevail in practice that will continue to cause this complication to arise. Deaths even will occur from diabetic coma in practice, but fewer and fewer such deaths should occur as practitioners are able to avail themselves of the treatment offered by modern medicine. Here, as elsewhere, the success of the treatment will depend upon factors surrounding the illness of the patient. Juvenile patients demand especial care; also cases with infection, nephritis, syphilis, and other complications demand especial knowledge and hospitalization in order to ward off diabetic coma.

Cardiorenal vascular disease is the more or less constant running mate of chronic diabetes. Practitioners may feel sure of the presence, in

*Am. Jour. Med. Sc., September, 1931, page 301.

more or less advanced form, of pathologic change affecting the heart, blood vessels and the kidneys of the diabetic over fifty years who has had the malady with any marked degree of severity for a few years. In this group, cardiorenal vascular complications constituted the most common type met with. There were found 273 cases with this complication.

Gangrene, the most striking and imperative of vascular complications, was found in seventy-two patients and of this number thirty-five died. A complication of this severe nature, advancing in patients with this malady, if detected early, should and will occur more rarely as conditions of practice improve and as patients are instructed in these grave possibilities of neglect of diabetes mellitus.

Arteriosclerosis in association with diabetes works destructive changes in the heart and kidneys. In this group of diabetic patients, forty showed heart disease. It is not apparent whether these cases of heart disease were primarily superinduced by diabetes, but it may be assumed, whether or not diabetes aggravated previous pathology, it did not originally set it up. Heart failure with death occurred in twenty-two of these cases of heart complications. The group of patients with diabetes and cardiac disease show a higher mortality rate than do cardiopaths without diabetes. The same observations may be made in the realm of nephritis and vascular disease.

Infections are serious complications in the diabetic. In this group there were eighty-six cases of infection. While any infection is borne poorly by the diabetic, pneumonia may be most dreaded or feared. The hospital figures of these authors showed a mortality of pneumonia of the non-diabetic type of 54.5 per cent, but of the diabetic a pneumonia mortality rate of 87.5 per cent was experienced.

All operations in which there is the factor of recovery of wound and the possibility of operation in infected areas must be considered most serious because of the grave danger of infection. The skin of the diabetic is never free from the possibilities of infection; accidental bruises and cuts of the skin, abrasions, particularly about the extremities are the occasion often of complications.

Tuberculosis showed as a complication in forty of these cases and sixteen died. Judging at the time of diagnosis of diabetes it was estimated that fourteen of these cases were non-tubercular but later developed the disease, while twenty-six were known to have both diabetes and tuberculosis. It appears to be true here as in other infections that the mortality is increased in the diabetic as compared to the non-diabetic. It may be stated in another way by saying that the arrest or retarding of tuberculosis in a diabetic is influenced greatly by the therapeutic management of the fundamental disease of metabolism—diabetes.

Syphilis in this large group of diabetics was found to be present in thirty-one cases and eight of them died giving a mortality rate of 29 per cent. The usual mortality rate of the hospital where these observations were made for non-diabetic syphilitics was 18.1 per cent. The same conclusion seems apparent here in this infection as in others—that the diabetic-syphilitic has a higher mortality rate than the non-diabetic-syphilitic. In the face of two maladies like diabetes and syphilis, the therapeutic problem is one of difficulty but it would seem that the diet-insulin-management of diabetes would but render more effective specific action of modern anti-syphilitic treatment.

From this consideration of 827 diabetics treated at the Milwaukee County Hospital, from January, 1922, to January, 1930, one may form a general judgment of the problems involved in diabetes and its complicating symptoms and pathology. It may be a matter for congratulation that in these figures, taken from an experience of the past eight years, it is shown that the complications of diabetes may be assuaged, if not relieved, by the use of modern treatment of diabetes with diet, insulin and fluid. It may be further thought that the modern treatment of diabetics by hospitalization and insulin treatment will do much to lessen the incidence of the complications of diabetes. More general adoption of the treatment by practitioners, earlier discovery of the disease, hospitalization of the diabetics for accurate study of individual needs in weighed and balance diets and measured insulin administration, will all tend to give a larger control over the disease itself and its complications.

Primary Carcinoma of the Duodenum.

Two recent papers direct attention to this subject. For years it has been more or less a question whether or not primary carcinoma occurs in the duodenum. The occurrence of carcinoma in the wall of the stomach is rel-

atively quite common, but primary carcinoma of the duodenum, quite often the site of ulcer, is rare. However, as pointed out by Meyer and Rosenberg,[1] the first report of a case of primary carcinoma of the duodenum was made as early as 1746. In 1761 Morgagni reported the second case, but for a hundred years following, no known reference in the publications was made to primary carcinoma of the duodenum. In the paper referred to a report of four cases is made and discussion is given of the clinical and diagnostic points incident to the subject.

Besides, one may peruse the paper of Hinton[2] who makes the inquiry, does carcinoma of the duodenum ever arise from duodenal ulcers? It is known that the site of ulcer of the duodenum is usually the supra-ampulla, while in a study by Deaver and Ravdin it was stated that the second portion of the duodenum was a more favored site for carcinoma. It is admitted that primary carcinoma occurs and this author indicates its rarity by noting that in 151,201 autopsies, collected from publications of nine workers, only fifty duodenal carcinomas were found, and autopsies embracing 25,787 bodies at the University of Pennsylvania showed only seven instances of primary carcinoma of the duodenum.

In the light of these figures and of clinical experience as recorded in medical publications, one may judge that primary carcinoma of the duodenum is a lesion of extreme rarity in practice, but that it does occasionally occur. We may, therefore, form the general opinion in contemplating the possibilities of carcinoma occurring in the matter of duodenal ulcer that it is extremely remote but does take place.

1. Meyer and Rosenberg. **Arch. Int. Med.**, Vol. 47, No. 6, page 917.
2. **Amer. Jour. Med. Sc.**, Vol. clxxxii, No. 6, page 843.

President's Message

Our Society: Something of its Past Work and Future Hopes.

The Sixty-Second Annual Session of the Medical Society of Virginia at Roanoke, October 6th-8th, will mark an important era in the history of organized medicine in Virginia. Originally functioning but once a year, the Society now carries on its scientific and educational work by means of twenty Standing and Special Committees, with a total membership of more than one hundred physicians, representing all sections of the State. As a result, this work is continuous and the influence of the Society is greater and more truly representative than ever before. It is now not only scientificaly self-instructive, but through its educational agencies is affecting the health and welfare of all of the people, and becoming a real factor in helping to solve many of the welfare and sociological problems of the day.

The Society at last realizes its full responsibility and seeks, in return for its appreciation by the public, to give of its special and skilled knowledge for the advancement of the profession and the people, utilizing every available means to this end, except the methods and machinations of politics. It studies the changing trends of the times and seeks, in cooperation with other like organizations, to weld and widen the opportunities for better scientific and more humanizing service. Just as there is a growing health consciousness on the part of the public, there has been an increasing civic consciousness in medicine. In other words, in order to fulfill its true destiny, medicine is no longer essentially individualistic, but is fast coming to have a public character.

In this new trend of thought and action, medicine should develop a public health service through cooperation and should assume leadership in all such relationships; for if organized medicine does not meet these demands of the times, other agencies of un-organized medicine will, and gradually, respect and appreciation of our work will materially decrease. The profession has always done individual preventive work, as well as curative medicine, for the one is as scientific as the other. Consequently, the work of the Society during recent years has been notably developed in its scope and methods of education not only of the members, but of the public.

Some of the Work Accomplished

Among the major activities and advances are the following:

1. An increased interest in continued medi-

cal study by the physicians, themselves, through the organization of the Department of Clinical Education which, by means of clinical lectures and practical courses of instruction, has brought the advances of medical science to practitioners without their having to leave their fields of work;

2. The appointment of a Joint Committee on Prenatal and Postnatal instruction, with representatives from the State Society and both Medical Colleges, which will provide a Clinician and Nurses, who will visit every section of the State and, with the cooperation of the local physicians, hold clinics showing the availability of modern medical service and care;

3. The appointment of a Committee on Child Welfare, which is doing special work in arranging for the examination, etc., of children of the pre-school age;

4. The appointment of a joint Committee on Public Education, which is designed to educate correctly the people on all medical matters; and

5. The appointment of a Public Relations Committee, County and State, which is actively seeking to correlate the work of the Society with all civic organizations doing similar work and, when necessary, giving proper information, and taking the leadership.

As a result of these diversified efforts, the scientific and educational work of the Society is being constantly enlarged and over-lapping agencies are being more centralized and directed to greater efficiency. Likewise, many diseases formerly calling for highly specialized medical service are now being steadily brought within the scope of the practice of the average general practitioner. As a further evidence of the value of the continuation method of graduate education, it has been noted that earlier diagnoses of disease have been made and special modern forms of treatment have been adopted.

Some of our Hopes

1. That the renewed spirit of scientific service and medical self-instruction shall continue to develop;

2. That our Medical Colleges, because of this new spirit, may soon be enabled to have a cooperation of effort from the profession that will enable them to enlarge their Post-graduate Courses, so as to give fuller practical educational courses to those practitioners desiring them; and

3. That our members may increasingly avail themselves of the scientific and educational benefits offered by the Society and ultimately become a profession, not only thoroughly and practically educated in modern scientific methods, but one that, through the years, will continue to be "up-to-date" and fully competent and which, because of scientific training and special skill, will always be ready to serve, not only its own individual clientele, but to render a larger service to the growing demands of a changing civilization.

J. Allison Hodges, M. D.,
President, Medical Society of Virginia.

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

Post-graduate Education.

Next month will mark the second anniversary of the attempt, on the part of the Medical Society of Virginia, to institute a regular campaign of Post-graduate Education for practitioners throughout the State. At the meeting of the House of Delegates in Norfolk, last November, a resolution was adopted, by which the President-Elect was made chairman of this Department. It is with mixed feelings of relief and regret that I approach the end of the year, hoping that the work may go on growing and improving under the leadership of my successor, for whom I bespeak your hearty cooperation and assistance.

We have had something to say on this page, in each issue of the Monthly since last November. To those, who were kind enough to write for this page, in the cause of Post-graduate Education, I am sincerely grateful and am sure their contributions have added much to the interest and value of what has been said. The other members of the Department of Clinical Education and the Advisory Board have been helpful and sympathetic. The councilors have shown great interest in working up clini-

cal meetings in their District and, with the assistance of Mr. G. W. Eutsler, our executive secretary, have really been the leaders in this work.

The members of the faculties of our two State medical schools have cooperated with us at all times, giving us valuable advice and providing clinicians and lecturers for the meetings at various points throughout the State.

The officers of local societies and their members have encouraged us by arranging meetings and programs in various communities, and the attendance at all of the clinical gatherings has been good.

Dr. J. Allison Hodges, our President, has been untiring in his efforts to help and encourage us and has assisted in every possible manner.

Mr. Eutsler, our executive secretary, has contributed greatly to the success of the work by his thorough and efficient methods of advertising the meetings, by means of cards and notices.

Our aim and purpose has been to teach medicine of today to the general practitioners by practical methods and clinics, held in various towns and villages throughout the State. At a number of these meetings we have been fortunate in securing speakers of national reputation. We have endeavored to emphasize the importance of continued education for all physicians and we feel that considerable progress has been made.

There is good reason to hope, after these first two years' experience, for still more progress and greater interest during the coming year.

We have much to learn and our methods will doubtless be improved as new hands take hold and new leaders show the way.

I. C. Harrison, M. D.,
President-Elect and Chairman, Department of Clinical Education.

Information

All members of the Medical Society of Virginia are requested to write for any information desired on any subject relative to these Extension Courses in Graduate Medical Education either to the Executive Secretary, Mr. George W. Eutsler, P. O. Box, 707, University, Va., or to the Chairman of the Department.

Roanoke Clinics, October 6th

The Clinics, sponsored by the Roanoke Academy of Medicine, and to be held on the afternoon of the opening day of our State Society meeting, promise to be perhaps the most interesting ever held in this State, in that we will have three men of national reputation—Dr. P. Brooke Bland, professor of obstetrics at Jefferson Medical College, Philadelphia; Dr. Charles Gilmore Kerley, professor of children's diseases at the Polyclinic Hospital, New York City; and Dr. Russell L Cecil, professor of medicine at Cornell University, New York City.

This will be a wonderful opportunity which none of our members can afford to miss.

REMEMBER—

Clinics—Obstetric, Pediatric and Medical.
Place—Ball Room, Patrick Henry Hotel.
Time—Tuesday, October 6th, from 2:00 to 5:00 P. M.

University Clinic

The program of the eighth Post-Graduate Clinic at the University of Virginia Hospital will be marked by two changes made in the interest of more attractive and more practical meetings. On both afternoons visiting physicians will be conducted on Ward Rounds by heads of the various departments. On the morning of the second day a Symposium on the Liver will be held, in which several members of the Medical Faculty will take part.

On Thursday evening there will be the usual Open Discussion when questions may be submitted by the visiting physicians.

All members of the medical profession are cordially invited to attend and are especially urged to remain during both days of the clinic. A detailed program will be mailed later.

Scheduled Meetings

The following are programs of Norfolk County Medical Society for October, 1931:

12th October—Section on Surgery—Subjects to be announced later.

19th October—Section on Medicine—On the Use of Instruments of Precision in the Diagnosis of Heart Disease—Dr. Jas. W. Hunter.

Myocardosis—Dr. Walter P. Adams.

22nd October—Section on Eye, Ear Nose and Throat—Allergic Rhinitis—Dr. Jos S. Hume.

Ulcerative Keratitis, Bilateral with Prolapse—Dr. S. B. Moore.

The Significance of Pain in Acute Ear Cases, With report of two cases—Dr. Wilson E. Driver.

26th October—Section on Pediatrics—Poliomyelitis, With Special Reference to Serum Treatment—Dr. Claiborne Willcox.

Proceedings of Societies

The Mecklenburg County Medical Society

Held its last meeting on September 15th. This was most interesting, there being a number of visiting physicians besides the regular members present. The following papers were read: Tetanus by Dr. I. C. Harrison, Danville; Clinical Aspects of Coronary Thrombosis by Dr. J. M. Hutcheson, Richmond; Treatment of Nervous Patients by Dr. D. P. Scott, Lynchburg; Infantile Paralysis—Early Symptoms by Dr. W. B. McIlwaine, Petersburg; and Case Reports by Dr. W. M. Winn, Clarksville, and Dr. G. Norfleet Carter, Boydton.

Officers elected for 1932 are: president, Dr. G. H. Carter, Boydton; vice-president, Dr. B. S. Yancey, Chase City; and secretary and treasurer, Dr. A. T. Finch, Chase City (re-elected). Delegate and alternate for the 1932 meeting of the Medical Society of Virginia were also elected at this time.

The Rockingham County Medical Society,

At its annual meeting, held recently, re-elected Dr. N. M. Canter president and Dr. J. C. Harshbarger secretary. Both officers are of Harrisonburg. Delegate and alternate to the Roanoke meeting of the State Society were elected at this meeting.

Fairfax County Medical Society.

At the August meeting of this society, the following officers were elected: president, Dr. C. A. Ransom, Falls Church; vice-presidents, Dr. Lyle Mason, Washington, D. C., and Dr. R. L. Wilkins, Alexandria; treasurer, Dr. F. M. Brooks, Fairfax Station; and secretary, Dr. Wm. P. Caton, Accotink (re-elected). Delegate and alternate to the Roanoke meeting of the Medical Society of Virginia were also elected at this time.

The Southampton County Medical Society,

At its meeting on September 10th, re-elected Dr. J. N. Applewhite, Capron, president, and Dr. W. T. McLemore, Courtland, secretary. Drs. Macauley Babb, Ivor, and R. L. Raiford, Franklin, were elected delegate and alternate, respectively, to the Roanoke meeting of the State Society.

The Prince Edward County Medical Society,

At its annual meeting on September 21st, elected the following officers: President, Dr. Thos. G. Hardy; vice-president, Dr. J. Weldon Smith; secretary-treasurer, Dr. Susan W. Field, all of Farmville. Delegate and alternate to the Roanoke meeting of the State Society were also elected at this meeting.

The following new members have been taken into the Society during the past year: Drs. Jos. H. Smith, Thos. E. Knight, and Caleb S. Stone, Jr., all of Farmville.

News Notes

High Lights of our Roanoke Meeting.

THE ROANOKE CLINIC

On the afternoon of Tuesday, October 6th, the physicians of Roanoke, as a courtesy to the members, have arranged for a Clinic that will be most instructive, and has some rather unusual features:

First—It is to be held at one place, the Patrick Henry Hotel, the official headquarters of the Society at its Annual Meeting;

Second—It will illustrate many of the more common diseases in general practice in the branches of Internal Medicine, Obstetrics and Diseases of Children; and

Third—It will be demonstrated by three visiting Clinicians, Dr. Russell L. Cecil, of New York City; Dr. P. Brooke Bland, of Philadelphia; and Dr. Charles G. Kerley, of New York City, all of whom are eminent in their special fields of work. It is hoped that many members will be present at this most interesting Clinic, for it promises to be unusually instructive.

Mental Hygiene Symposium

The Special Topic for this year's discussion, Mental Hygiene, its scope and application to medicine, as well as its relations to the general public, will be the special order for the consideration of the members on Wednesday morning, and it is believed that it will prove to be a most timely and appreciative discussion.

The opening speaker will be Dr. Ralph P. Truitt, of Baltimore, Professor of Psychiatry in the University of Maryland (invited guest), and he will be followed by Dr. D. C. Wilson, Professor of Nervous Diseases at the University of Virginia; Dr. W. F. Drewry, Director of the Bureau of Mental Hygiene, of the Virginia Department of Public Welfare; Dr. B. R. Tucker, Professor of Neurology and Psychiatry, at the Medical College of Virginia, and three other members of the Society, who will briefly note its relations to the different specialties of medicine and surgery.

All members are urged to be present for an unusually interesting and comprehensive discussion which will be given by this carefully selected group of eminent and authoritative leaders.

Introduction of New State Health Commissioner

Another rather unusual feature of this year's meeting will be the formal introduction of Dr. W. F. Draper, successor of Dr. Ennion G. Williams, to the members and physicians of the State, at the Wednesday night meeting.

Dr. Draper will at that time make an address and outline his views on the "Interrelationships of Preventive and Curative Medicine."

All State Health Officers and County Health officials are cordially invited to attend this meeting.

That "Winding Road"

The Medical Faculty of Roanoke, in providing for the final afternoon Session at Catawba Sanatorium, are offering the members a most pleasant and diverting feature this year, but probably they were not aware that unwittingly they were giving, especially to the "Down-Easters," a pleasure in seeing beautiful scenery that is seldom equalled, except in a country "girt about by rugged mountains."

Delegates to Roanoke Meeting.

A number of component societies have not yet reported names of their delegates and alternates. These are urged to send names at once to the Executive Offices, 104½ W. Grace Street, Richmond. Those already listed are:

Delegate	Society	Alternate
	Accomac	
Dr. J. H. Ayres		Dr. W. M. Burwell
	Albemarle	
Dr. D. C. Smith		Dr. R. L. Page
Dr. A. D. Hart		Dr R. T. Ergenbright
	Alexandria	
Dr. Llewellyn Powell		Dr. W. E. Beattie
	Alleghany-Bath	
Dr. B. B. McCutchan		Dr. A. D. Tyree
Dr. G. A. Torrence		Dr. M. B. Jarman
	Amelia	
Dr. J. M. Habel		Dr. G. A. Arhart
	Augusta	
Dr. A. L. Tynes		Dr. R. S. Griffith
	Bedford	
Dr. W. O. McCabe		Dr. M. P. Rucker
	Charlotte	
Dr. C. M. Nicholson		Dr. C. W. Tucker
	Fairfax	
Dr. C. A. Ransom		Dr. William Meyer
	Fauquier	
Dr. W. C. Payne		Dr. Geo. H. Davis
	James City-New Kent	
Dr. J. R. Parker		Dr. J. R. Tucker
	Loudoun	
Dr. Geo. H. Musgrave		Dr. John A. Gibson
	Lynchburg and Campbell Co.	
Dr. George J. Tompkins		Dr. B. H. Kyle
Dr. H. B. Spencer		Dr. Ernest G. Scott
	Mecklenburg	
Dr. W. W. Wilkinson		Dr. B. S. Yancey
	Nelson	
Dr. F. M. Horsley		Dr. J. C. Everett
	Northern Virginia	
Dr. J. G. Brown		
	Mid-Tidewater	
Dr. E. C. Cobb		
Dr. Thos. B. Latane		Dr R. D. Bates
Dr. Wm. Gwathmey		
Dr. R. R. Hoskins		
Dr. E. L. W. Ferry		
Dr. M. H. Eames		
Dr. Harry Tabb		
Dr. L. O. Powell		
Dr. M. H. Harris		
	Nansemond	
Dr. C. J. Riddick		Dr. G. R. Joyner
	Norfolk	
Dr. Walter B. Martin		Dr. F. D. Wilson
Dr. N. G. Wilson		Dr. J. D. Collins
Dr. H. L. Myers		Dr. C. L. Harrell
Dr. Julian L. Rawls		Dr. W. P. McDowell
Dr. P. St. L. Moncure		Dr. C. J. Andrews

Delegate	Society	Alternate
	PATRICK-HENRY	
Dr. W. C. Akers		Dr. W. N. Thompson
Dr. E. N. Shockley		Dr. D. L. Fleshman
	PITTSYLVANIA CO. AND DANVILLE	
Dr. P. W. Miles		Dr. W. W. Robertson
	POST-GRADUATE	
Dr. W. C. Harmon		Dr. F. N. Mallory
Dr. H. C. Jones		Dr. Meade Edmunds
Dr. B. J. Atkinson		Dr. G. M. Naff
Dr. W. W. Bennett		Dr. J. A. B. Lowry
Dr. D. L. Elder		Dr. J. M. Bailey
Dr. W. D. Kendig		Dr. H. E. Whaley
Dr. W. W. Seward		Dr. F. E. Steere
Dr. Joel Crawford		Dr. W. D. Prince
	POWHATAN	
Dr. R. D. Tucker		
	PRINCE EDWARD	
Dr. Ray A. Moore		Dr. Jos. H. Smith
	PRINCESS ANNE	
Dr. Cora Z. Corpening		Dr. H. F. Dormire
	RICHMOND ACADEMY	
Dr. St. J. Oppenhimer		Dr. W. K. Dix
Dr. Thos. W. Murrell		Dr. Thos. D. Jones
Dr. Warren T. Vaughan		Dr. J. B. Bullard
Dr. William A. Shepherd		Dr. E. H. Terrell
Dr. P. D. Lipscomb		Dr. [illegible] Graham
Dr. Wm. B. Porter		Dr. J. G. Lyerly
Dr. A. S. Brinkley		Dr. O. B. Darden
Dr. Dean B. Cole		Dr. J. Blair Fitts
Dr. J. M. Hutcheson		Dr. R. F. Gayle
	ROCKBRIDGE	
Dr. E. P. Tompkins		Dr. C. H. Davidson
	ROCKINGHAM	
Dr. H. Grant Preston		Dr. F. L. Byers
	SOUTHAMPTON	
Dr. McCauley Babb		Dr. R. L. Raiford
	SOUTHWESTERN	
Dr. L. F. Cosby		Dr. S. H. Yokeley
Dr. T. K. McKee		Dr. A. B. Graybeal
Dr. E. M. Chitwood		Dr. C. F. Graham
Dr. R. H. Harrington		Dr. B. F. Eckles
Dr. A. B. Woolwine		
Dr. R. H. Woolling		Dr. W. R. Cushing
Dr. J. L. Early		Dr. A. M. Showalter
Dr. B. F. Eckles		Dr. W. R. Gardner
Dr. W. C. Caudill		Dr. M. C. Newton
	WARWICK	
Dr. H. G. Longaker		Dr. J. Warren Sayre
	WISE	
Dr. W. R. Culbertson		Dr. J. B. Wolfe

Virginia Pediatric Society.

The annual luncheon meeting of this Society is to be held in Roanoke, on the second day of the annual meeting of the State Society—October 7th. This will be at 1:00 P. M. in the Red Room of the Patrick Henry Hotel, and the plates will be $1.50 each. All members of the State Society are invited. Reservations for the luncheon should be made through Dr. J. B. Stone, Secretary, 2042 Park Avenue, Richmond, or at time of registering in Roanoke. Dr. W. B. McIlwaine, Petersburg, is president this year.

The guest speaker at this luncheon meeting is to be Dr. Horton Casparis, professor of pediatrics at Vanderbilt University, Nashville, Tenn., which will talk on "Tuberculosis in Children: Prevention and Control."

The Virgina Roentgen Ray Club

Has planned to held its annual meeting at 6:30 P. M., Wednesday, October 7th, at the Patrick Henry Hotel, Roanoke. Dr. A. L. Gray, Richmond, is president, and Dr. Wright Clarkson, Petersburg, secretary.

Medical College of Virginia News.

The dormitory and educational unit of the St. Philip Hospital school of nursing was occupied by students on Monday, September 14th. This handsome building, the gift largely of several of the foundations, provides one full floor for library, laboratory, other teaching and recreational facilities. It will house 94 student nurses and staff members in single rooms with several exceptions. This new addition to the college plant fronts 110 feet on the north side of Marshall Street immediately north of the St. Philip Hospital. Formal opening of the building is scheduled for some time in October.

The total bequest of the late Martha Allen Wise toward the endowment of the St. Philip Hospital amounted to $144,114.66. The settlement of the estate was completed a few weeks ago.

Bids on the new college library, to be constructed adjoining the library and home of the Richmond Academy of Medicine on the northeast corner of Clay and Twelfth Streets in the college group, will be opened on September 24th. It is hoped that work on this long projected building will get under way early in October.

The Medical College of Virginia formally opened registration on Tuesday, September 15th. Approximately 750 students had completed registration by the time classes resumed at two o'clock on Wednesday, September 16th. It is expected that the usual matriculation of

about 800 will be reached by the time books are closed on September 22nd. The opening convocation was held on Wednesday, September 16th, with Dr. W. T. Sanger presiding. The deans, officials of the college, president of the student body, and Mr. Larrick, of the college Y. M. C. A., were introduced for brief remarks.

According to figures compiled in the office of Dr. W. T. Sanger, president of the College, 1,126 of the 2,500 physicians practicing their profession in this State are graduates of the Medical College of Virginia. Physicians practicing in Virginia counties total 1,121 and of this number 529 are graduates of this college and of 1,148 doctors in twenty Virginia cities 597, or 41 per cent, are alumni of the college.

News Notes From the Duke University School of Medicine and Duke Hospital.

On August 17th, Dr. J. D. Hart read a paper on Skin Transplantation at the meeting of the Buncombe County Medical Society, in Asheville, N. C.

On August 19th, Miss Bessie Baker, Dean of the School of Nursing, and Mrs. Nancy L. Lawlor, attended the meeting of the North Carolina State Nurses' Association, at Black Mountain, N. C., at which Mrs. Lawlor presented a paper on the Relationship Between the Hospital and Public Health.

On September 1st, the following new members of the staff were added: Dr. Angus M. McBryde, of the University of Pennsylvania, Instructor in Pediatrics; Dr. Walter B. Mayer, of the University of Pennsylvania, Assistant in Medicine, Dr. Harold Finkelstein, Assistant in Surgery, Dr. Anne Lawton, of Yale University, Assistant in Pediatrics, and Mr. Morton F. Mason, of Oregon State College, Assistant in Biochemistry.

On September 10th, Drs. Bayard Carter, J. D. Hart and Wilburt Davison spoke at the meeting of the local Medical Society at Danville, Va.

On September 15th, Dr. Davison spoke at the meeting of the Mecklenburg Medical Society, at Charlotte, N. C.

On September 11th, the Duke Hospital gave its annual barbecue followed by the meeting of the Durham-Orange County Medical Society.

On September 24th, at the meeting of the Seventh District Medical Society, at Sumter, S. C., Dr. Hart will present a paper on The Treatment of Chronic Empyema by Preliminary Tidal Irrigation by Thoracoplasty, and Dr. A. R. Shands, Jr., will give a paper on Insection In and About Hip Joint.

Married.

Dr. John Franklin Woodward, Jr., and Miss Isobel Robertson Carrington, both of New York City, September 26th. Dr. Woodward, formerly of Norfolk, Va., graduated from the University of Virginia in 1928. He is at present doing special work in ear, nose and throat at the Manhattan Eye, Ear and Throat Hospital, New York City.

Dr. John Winston Fowlkes and Miss Lucy Burwell Allen, of New York City, September 26th. Dr. Fowlkes is a member of the class of '15, University of Virginia, Department of Medicine.

Dr. William P. Richardson and Miss Treva Hedrick, both of Lenoir, N. C., recently. Dr. Richardson is an alumnus of the Medical College of Virginia in the class of '28.

American College of Surgeons.

Following closely our State Society meeting is the 1931 Clinical Congress and annual meeting of the American College of Surgeons. This will be held in New York City, October 12th-16th, with headquarters at the Waldorf Hotel. The name of this organization is sufficient guarantee of the splendid program which may be expected. Dr. C. Jeff Miller, New Orleans, is this year's president, and Dr. Franklin H. Martin, 40 East Erie Street, Chicago, is director general.

Dr. E. R. Ware,

Of the class of '28, Medical College of Virginia, after serving two years as intern in Baptist Hospital of Winston-Salem, N. C., and one year as resident physician of the City Memorial Hospital of that place, has located in Fredericksburg, Va., for the practice of his profession.

Dr. William C. Brice,

Who practiced several years ago at Stonega, Va., but now located at Silver City, N. Mex.,

has been appointed health officer of Grant County, that State.

Dr. and Mrs. E. Pendleton Tompkins

And young son, of Lexington, Va., recently returned from a visit to Cape Cod, Mass. On their way home, they stopped in Philadelphia, to visit their elder son, Dr. Pendleton S. Tompkins, who is at present an intern in the University of Pennsylvania Hospital.

Post-Graduate Clinic at University Hospital.

A notice of the eighth Post-Graduate Clinic at the University of Virginia Hospital appears under SCHEDULED CLINICS in the Department of Clinical Education of this issue. Those interested in Clinics should read what it offers.

Dr. A. T. Finch,

Chase City, Va., was elected State Commander of the American Legion at its meeting in Clifton Forge, Va., the latter part of August.

Dr. and Mrs. Charles Lewis Baird

And Charles Lewis Baird, Jr., visited in Richmond, Va., for several weeks on their way to Fort Benning, Ga., at which post Dr. Baird will be connected with the hospital staff. Dr. Baird graduated from the Medical College of Virginia in 1929 and is a member of the Medical Corps of the U. S. Army.

Dr. John D. Ware,

Of the class of '29, University of Virginia, is now at 523 North Wolfe Street, Baltimore, Md. He is doing research work in otology under Dr. S. J. Crowe at Johns Hopkins Hospital.

Dr. Morgan, Dean at Georgetown University.

Dr. William Gerry Morgan, Washington, D. C., ex-president of the American Medical Association and an honorary member of the Medical Society of Virginia, was unanimously elected dean of the Georgetown University School of Medicine in that city, at a recent meeting. He is also a regent of the University.

The Southern Medical Meeting.

The Southern Medical Association holds its annual meeting, this year, in New Orleans, La.,—that lovely metropolis of the South, noted for its charm and as a medical center. The president is Dr. Felix J. Underwood, of Jackson, Miss.

The dates of this meeting are November 18th-20th, following which there will be a post-convention cruise to Panama, the Canal Zone, etc. There will be clinics, and plenty of scientific papers and exhibits. Other information may be obtained from Mr. C. P. Loranz, secretary-manager, Empire Building, Birmingham, Ala.

Dr. B. F. Randolph,

Arrington, Va., attended the Southern Pediatric Seminar at Saluda, N. C., from July 20th to August 1st.

Examination for Entrance into the Regular Corps of U. S. Public Health Service.

Examination of candidates for commission as Assistant Surgeon in the Regular Corps of the U. S. Public Health Service will be held at the following-named places on November 2, 1931:

Washington, D. C.,
Chicago, Ill.,
New Orleans, La.
San Francisco, Calif.

Request for information or permission to take this examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

Goiter Classification and Nomenclature.

The American Association for the Study of Goiter, through its Corresponding Secretary, Dr. J. R. Yung, of Terre Haute, Ind., asks that we give publicity to its approval of the following classification and nomenclature:

CLINICAL CLASSIFICATION:

Type 1—Non-toxic Diffuse Goiter.
Type 2—Toxic Diffuse Goiter.
Type 3—Non-toxic Nodular Goiter.
Type 4—Toxic Nodular Goiter.

NOMENCLATURE:

The association advocates a policy of using the simplest and yet the most descriptive terminology possible.

The use of proper names, while it is impossible to dispense with many well established ones in goiter literature, be discouraged; as should coined words invented to popularize a fad or fancy.

Emphasis should be made upon the importance of not confounding varieties and sequelae with types. The use of such terms as exophthalmic, hemorrhagic, cystic, adolescent, col-

loid, intra-thoracic, substernal and congenital are perfectly proper when used to describe varieties, but only constant characteristics should be used to designate types.

Dr. L. Philip Cox

Has located in Fredericksburg, Va., where he will specialize in diseases of the eye, ear, nose and throat. Dr. Cox is a native of Mobile, Ala. Upon completion of his academic education at Davidson College, North Carolina, he studied medicine at the University of Pennsylvania, from which he graduated in 1929. Since then, he has spent some time in post-graduate study in his specialty.

The Interstate Post-Graduate Medical Association of North America

Has arranged an excellent program by speakers of national prominence for its meeting in Milwaukee, Wis., October 19th to 23rd, inclusive, under the presidence of Dr. Henry A. Christian, of Boston. Dr. Edwin Henes, Jr., Milwaukee, is secretary; Dr. George W. Crile, Cleveland, chairman of Program Committee; and Dr. Wm. B. Peck, Freeport, Ill., managing director.

Conference on Childhood and Youth.

Governor Pollard has called a State-wide Conference on Childhood and Youth to meet in connection with the regular annual meeting of the Cooperative Education Association, in Richmond, November 23rd and 24th. This will be a follow-up in Virginia of the White House Conference on Child Health and Protection. Dr. J. L. Jarman is chairman and Mr. J. H. Montgomery secretary of this conference and also members of the Planning Committee which is further composed of Dr. Sidney B. Hall, chairman of the Education Committee; Dr. Warren F. Draper, chairman of the Committee on Health; Mr. Frank Bane, chairman of the Committee on Welfare; and Dr. W. T. Sanger, chairman of Committee on Character and Civic Education.

This Conference will be opened by the Governor on the night of November 23rd. The following day there will be a number of committee meetings and that evening there will be a report on the findings of the committees and an inspirational address. All of these meetings are open to the public and a large attendance is expected.

Dr. John E. Gardner

Has returned to his practice in Roanoke, Va., after six weeks spent in special electrocardiographic work in the cardiology department of the Johns Hopkins Hospital, Baltimore, Md.

Doctors as Officers of Country Club.

Dr. R. H. Woolling was recently elected president of the Pulaski, Va., Country Club and Dr. R. F. Thornhill was elected a member of the board of directors.

International Association of Industrial Accident Boards and Commissions.

The annual meeting of this organization will be held in Richmond, Va., October 5th-9th, under the presidency of Parke P. Deans of the Industrial Commission of Virginia. Wednesday, the 7th, will be given over to a medical program and will be participated in by doctors interested in this work. The program of this section appeared in the September issue of the MONTHLY. Dr. G. H. Gehrmann, Wilmington, Del., and Dr. H. U. Stephenson, Richmond, vice-presidents of the general organization, will preside over the morning and afternoon sessions, respectively.

Dr. Edward N. Pleasants,

Who was graduated from Medical College of Virginia in 1927 and practiced until recently in Richmond, Va., has moved to Alloy, W. Va., where he is associated with Dr. Walter Simmons as one of the physicians with the Union Carbide Company.

Dr. Bertrand G. Lawrence

Has opened offices in the Medical Arts Building, Roanoke, Va., for the practice of Neuro-Psychiatry. Following his graduation from the Johns Hopkins University Medical School, Dr. Lawrence served one year as intern at the State of Wisconsin General Hospital, Madison, Wis. He then spent a year as Resident Neuro-Psychiatrist in the same Hospital and for the past year has been a member of the faculty of the Neuro-Psychiatric Department of the University of Wisconsin.

Dr. L. C. Haynes

Returned to his home at Mt. Jackson, Va., the latter part of September, after a stay of three months in Seattle, Wash., where he did post-graduate study at the various hospitals.

Dr. Beverley R. Tucker,

Richmond, Va., has just returned from a trip abroad. He went over to attend the International Congress on Nervous Diseases in Berne, Switzerland. There were 831 neurologists in attendance upon this meeting. These with members of their families acompanying them made a gathering of about 1,500.

Dr. and Mrs. R. H. Rowe

And children have returned to their home in Exeter, Va., after a visit to several places in North Carolina, including Hickory and Carolina Beach. Dr. Rowe was formerly located at Hickory but is now physician for the Stonega Coke and Coal Company at Exeter.

Dr. Van M. Ellis,

Of the class of '30, Medical College of Virginia, recently completed his internship at the Wisconsin General Hospital, Madison, Wis., and has located at Durham, N. C.

Dr. and Mrs. Herbert W. Lewis

And daughter, Mildred, spent their vacation on a motor trip through the mountains of southwestern Virginia, Tennessee and North Carolina, stopping for visits with relatives and friends at several places.

Resigns From Health Work.

Dr. Charles Hall Farmer, after a year's service as assistant director of the Southside Health unit, recently tendered his resignation. He has returned to Macon, Ga., where he will engage in private practice.

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Obituary Record

Dr. Levi Johnson Stump,

Pocahontas, Va., died at his home in that place, August 31st, death being due to myocarditis. He was born at Valley, W. Va., in November, 1859, and studied medicine at the Medical College of Virginia, graduating from that institution in 1882. He is survived by one son, Dr. C. E. Stump, of Pocahontas, and a sister. He had been a member of the Medical Society of Virginia for a number of years and was a Mason, Shriner and Elk.

Dr. Charles Fenton Russell,

Herndon, Va., perhaps the oldest physician in this State, died July 16th, after a few days' illness. He was 92 years of age and a graduate of the University of Maryland in the class of 1867. He enlisted for service in the Civil War while a student at the University of Virginia and served in the cavalry, being injured three times. One son, two daughters and a number of grandchildren survive him. Dr. Russell had been a resident of Herndon for nearly forty years. He was an honorary member of the Herndon Masonic Lodge, and belonged to several other fraternal organizations. He was a member and ex-president of the Fairfax County Medical Society and a member of the Medical Society of Virginia.

Dr. Wiliam Scarff Wiley,

Prominent physician and surgeon of Bristol, Va.-Tenn., died eptember 11th, death being due to tetanus which, it is believed, resulted from an abscessed tooth. He was the son of Dr. and Mrs. George E. Wiley, of Bristol, and 49 years of age. He studied medicine at the Medical College of Virginia and later at the Baltimore (Md.) Medical College, graduating from the last named school in 1905. After spending two years in New York Hospitals, he returned to Bristol where he had since practiced. He served in the Medical Corps of the U. S. Army in the World War. Dr. Wiley was a member of the Medical Society of Virginia and of several fraternal organizations. He is survived by his wife and four children in addition to his parents and one sister.

Dr. Emerson Land,

Virginia Beach, Va., former member of the Medical Society of Virginia, died July 29th, at the age of 70 years. He graduated in medicine from the University of Maryland, Baltimore, in 1886. He was for many years county health officer of Princess Anne and was formerly mayor of Virginia Beach.

Dr. Robert L. McMurran,

Portsmouth, Va., died suddenly June 23rd, death being due to angina pectoris. He was 65 years of age and had received his medical education at Jefferson Medical College, Philadelphia, from which he graduated in 1890.

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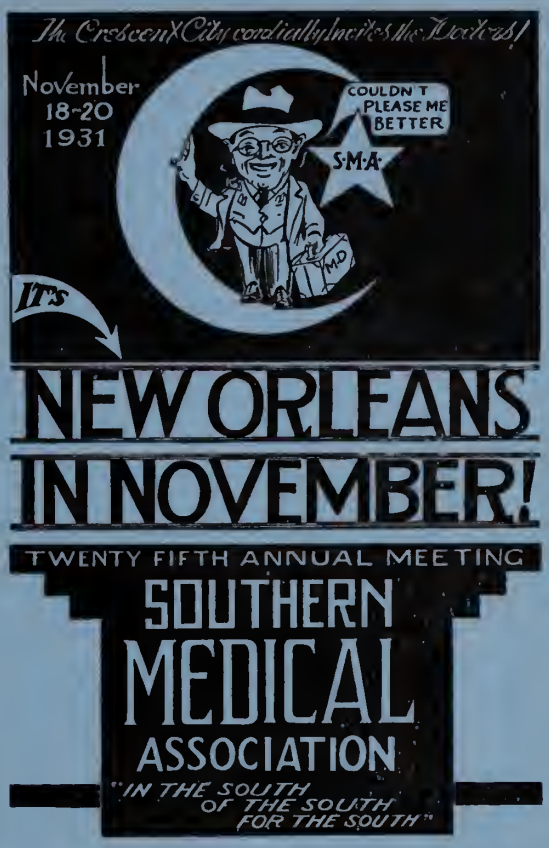

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RICHMOND, VA., NOVEMBER, 1931

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SOME MEDICAL TOPICS OF SPECIAL CURRENT INTEREST.*

By J. ALLISON HODGES, M. D., F. A. C. P., Richmond, Va.

Within the past year, I have made a rather complete personal survey of the general profession and its work in this State, and am pleased to report fairly progressive improvement. In many professions and industries, there is today over-organization, but this is not true of the Medical Profession in Virginia. In fact, we need more thorough organization of the State and counties, especially in co-ordinating business and professional relations in our work for the individual, as well as for the public. The three notable defects in our system of organized medicine, as developed by the survey, were: First—Lack of proper cooperation of the hospitals of the State with the physicians referring patients to them, and their failure to make these Temples of Health, also Centers of instruction to all the physicians in their communities; Second—The failure of the County Societies to provide methods of liaison with local private and public health agencies, by the appointment of members of their Public Relations Committees to assist and, if need be, adjust and lead all new health movements; and, Third—The necessity in the field for better office equipment and more scientific personal work by general practitioners, whereby earlier diagnoses might be made, and less reference work be advised, or become necessary.

The greatest need, however, judging from many letters received from widely separated sections, was for a new and more diversified professional service to patients and to the public, for it was revealed that the physician must meet changing needs, and to do this, he must study, or he would forget; he must go forward, or he would go backward,—he could not stand still and succeed in this day of transition in medical methods.

This work of ours, the Profession of Medicine, is a noble one, a great profession, and should engage our best efforts and stimulate our greatest endeavors. We have yet but dimly seen our destiny, and the future stretches before us like the great ocean of truth, "all undiscovered." We have accomplished much, both as a Society and as individuals, but more lies beyond, beckoning us onward and ever forward in our search for the hidden and the unknown.

To those of you who do not know our past history of scientific attainment and professional advancement, I might tell the medical story of the ages, as medicine has gone forward from one conquest to another in the cure of disease and in the prevention of pestilence, but it is sufficient to say that it is still advancing, and has accomplished more in the past thirty years than in the previous one hundred, but is still far from attaining its fullest and highest aims.

If I had the time or inclination, I could tell you also some of the routes that have been traveled, and some of the experiments that have been conducted by scientific research workers in their efforts to solve the mysteries of disease and its causes, and the story would be often-times as intriguing as any of the famous romances of history; and yet, many diseases in their entirety are still unsolved problems, and the battlefields of life are still strewn with wreckage from the tireless war against germs that have claimed their millions of victims.

Before the close of this year it is estimated that 700,000 Americans will have died of four diseases alone, viz:—heart affections, Bright's disease, brain hemorrhage, and cancer. It is also pathetic to note that some of our most common diseases, such as influenza, pneumonia, and infantile paralysis, are nearly as fatal today as they were a century ago. The citation of these facts is not wholly discouraging, however, but simply a challenge to the future.

*Presidential address delivered before the sixty-second annual meeting of the Medical Society of Virginia, at Roanoke, Va., October 6-8, 1931.

In addition to the casualties from germ infection that are not yet fully understood, we know but little of body chemistry, of biological development, of the physiological processes of the ductless glands, of mental development and its everchanging tendencies, and a host of other mysteries of life and disease. Suffice it to say, however, that we have not to look in the past, nor to the future, to have our scientific interest awakened, or our zeal quickened. We need but look only at our own environment, and at once our pulses throb in the excitement of eager anticipation to find the means to conquer the enemy that stalks at our very doors.

For instance, only today, I have read that in a neighboring State, last year, pellagra, whose cause and cure we thought we had completely mastered several years ago, claimed one thousand victims in twenty thousand cases of that dreaded disease. Other similar facts could be easily adduced to show that we still need more education, more scientific knowledge and more skilled service.

In passing, may I say also, that at the very fountain heads of medical education, the medical colleges, there is need, and a crying need, for education, real education, in arranging medical college educational courses; those colleges need to teach their students less and more —less of many educational adornments, superficially making specialists, instead of general practitioners, and more of practical scientific methods to meet the existing conditions of every day life as the physician on graduation will find them; and, above all, more of the spirit of personal research work, and the habit of individual study of the cause and effect of disease; but, I must not be hypercritical, for if I am, I must appraise our own profession, for this is an age of appraisals, and, to be just, it is first necessary for us to know if medicine is meeting all its own obligations of private and public service.

Medicine, at present, it must be admitted, is in a transitional stage, and if the virility of the profession is to be conserved and continued, as Dr. Osler has said, "As the greatest factor in human happiness and in civilization," its relationships must have careful appraisal and consideration. Once, medicine was an individualistic profession; today, it is fast coming to have a public character, and if the public is appraising medicine, why should medicine not appraise itself?

Dr. William H. Ross, Ex-President of the New York State Medical Society, says: "Just as success for the physician in the practice of his profession depends upon the proper interpretation of symptoms, so does the future position of medicine depend upon the proper interpretation of the symptoms of public unrest, and the capacity of the Profession of Medicine to make its service available and adequate to meet all demands, both public and private." Moreover, medicine is no longer an isolated profession, nor the doctor, himself, a privileged member of the learned professions, nor even the sole repository of all knowledge and authority in medical matters, for, nowadays, the masses are being taught along medical lines, and the treatment of disease is eagerly, if not always learnedly discussed at every street corner and rural center. If discussed intelligently, all is well; if not, irreparable damage is done, and consequently, the opportunities for the physician are legion in number. Also, the health needs of the public, as well as the private necessities of the individual, must logically be met by the cooperation and solved by the guidance of the physicians. This will entail new duties on the membership of County Medical Societies, but it is the only way in which organized medicine can maintain its scientific authority and advance its professional interests.

Medicine is thus confronted by a new situation, but this is not an entirely new phase, for many of us have witnessed in our life-time another transformation in the evolution of medicine, just as remarkable as this, when diagnosis and treatment of disease were revolutionized because of new laboratory aids and the use of new instruments of precision.

This enlarged field of medical service is, then, but another developmental phase of this transitional era in medicine. We must recognize its advent and be prepared to meet its demands, not by fighting, but by educating. If we do not, some other health agency, or perhaps even some governmental agency, may.

Times are rapidly changing, and, if need be, we must change our methods of thought and action to meet squarely the issues presented. Not only is the public showing a steadily increasing participation in public health matters, but civic organizations and na-

tional foundations, in response to public demands and supported by public opinion, as well also as industry itself, are trying to advance health service in an effort to save as much as possible of the one hundred million dollars wastage in preventable illness, and all are joining forces to limit illness, and constructively make producers out of consumers. Unless organized medicine meets these obligations of public service, as has been outlined, some other agency must.

Furthermore, the social trends of the times irresistibly insist on better health service, and this is evidenced and reflected in public welfare laws, old age pensions, etc., the various civic organizations supplying the enthusiasm, and the Foundations the money. The individual relations of doctor and patient still exist, but social needs have changed, and forced to the front new demands for relief and new opportunities for service. We may be nearer than we suspect to such things as compulsory health insurance, sickness benefits, etc., or, perhaps later, entire and adequate medical care by the State, and we should pause to think.

In medicine, as in few other professions, its relationships to the public are both intimate and personal, and it should be easy for our profession to arouse medical interest in present-day social trends and formulate plans through organized medical channels already provided, making it co-equal in all health agencies, and thus put the profession in the position the public demands and expects.

Conference and cooperation must fall in with the advance guard, while the microscope and the scalpel must still be the protectors of the rear guard in the battle for human life. The physician has always practiced preventive medicine as individual to individual, but when it assumed police powers, he withdrew, though always believing in individual and mass prevention.

Now that social needs have changed, he no longer should fight the new movement by raising artificial barriers of economic conditions or social problems, but fall in with the new thought and cooperate with other agencies under the expert guidance of the profession. I would not have you think that I would ask you to be "quitters" in this struggle, and let new non-organized agencies gather the fruits of your age-old fight for your professional aims, nor would I advise that you be sulky camp-followers, contented with anything that is left, but, rather, I would have you visualize a new medical future, in which public thought, supported by public opinion, demands of us a larger stewardship and a fuller service under the guidance, always, of our profession. By giving up some old and worn-out ideas and prejudices, we can slowly steer the thought of the times by adjusting our methods, and, in this way, surely and safely guide the profession to bigger and better accomplishments.

No clear thinker nor even the casual observer of today doubts the evidence of a gradually increasing paternalistic movement on the part of the Government, nor of some increase in State medicine, but it is idle to fight these encroachments by politics or by legislation, for we are admitted failures in both fields. Rather let us wisely prepare for their advance by proper education, by cooperative relationships, and by medical statesmanship.

To solve these public health problems, our Society, with its present constituent County Societies, together with its State and County Public Health Relations Committees, has sufficient machinery, and we need nothing else but the enthusiastic devotion of our members, together with their expert scientific leadership. Without these, we cannot meet our present professional obligations and prevent further economic and professional disturbance of the private practice of medicine.

Surely, the practice of medicine today is threatened with an increasing economic disturbance, because of the lessened incidence of certain diseases, due mainly to our own efforts; but, on the other hand, a new pathology in disease is being studied and new types of examination of the patient are being practiced, as you will note by the wide interest, for example, in mental hygiene, which seeks a more complete exhibit of the patient's mental processes, and, consequently, a better understanding of the development of the individual patient, thus leading to a clinical treatment that in many instances includes the consideration of the patient as well as the disease—a new method to many practitioners.

I am not fully arguing this matter, nor any of the subjects to which I have referred, for I would not abuse the privileges of this hour, and, besides, I note two other speakers on tonight's program, who will probably follow up

these passing thoughts in discussing medical relations to private practice.

In conclusion, we well know the virtues and the defects of our profession, and, while congratulating it upon its distinguished accomplishments, we are still aware that an even greater future of professional service is before us, if we shall self-appraise our service and our methods and fit our energies into present and future necessities. We have the men; we have the knowledge; and I have abiding faith that the coming family physician, the bulwark and strong arm of the profession, born now to new opportunities, will have the same spirit as of old, plus the new spirit of these new and changing days, for *new times demand new ideas.*

Victor Hugo, said: "One idea, just an idea, once its day of fulfillment has arrived, is mightier than a multitude of men."

I repeat, "new times, new ideas, new men"—the connection is logical, the results will be convincing.

I would not, if I could, recall the sad and sombre days of the World War, when the clouds of doubt and indecision hung low over our land and obscured the faint light of hope and faith that burned but dimly in the hearts of us all; but I would recall, if I could, the spirit of high courage and heart-loyalty of those trying days, for no sooner was a new idea for the common good announced than it was successfully accomplished, and, at home and on the field, it was but another bond of union for new endeavor and final success.

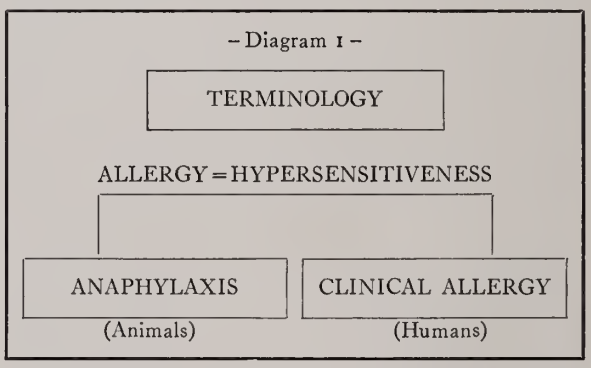
Let us, then, preserve the ethical *ideals* of the past, and keep step with the progressive *ideas* of the present; and the future will be ours, "to have and to hold."

OBSERVATIONS ON THE NATURE AND PATHOLOGICAL PHYSIOLOGY OF CLINICAL ALLERGY.*

By OSCAR SWINEFORD, Jr., M. D., University, Va.

Introduction: Balyeat[1] estimates that about 7 per cent of the population of the United States are sufferers from some form of clinical allergy such as asthma, hay fever, urticaria, eczema, migraine, and allied conditions. The subject is very complex. The terminology is confusing and in many instances inconsistent. The premises upon which many of the present conceptions are based are theoretical or hypothetical. It seems desirable then to formulate a working hypothesis in terms of which we may explain simply and logically these varied and superficially unrelated manifestations which we think of as "allergic." The theme of the discussion is summarized in ten diagrams.

Definition: Coca[2] defines allergy (hypersensitiveness) as that state in which an individual reacts specifically and with characteristic symptoms to the administration of, or to contact with, a quantity of any substance which, to the majority of the members of the same species, is innocuous. In this brief statement the fundamental concepts of specificity, characteristic symptom complexes and inherent harmlessness of the offending agent are given due emphasis.



Terminology: There is a lamentable lack of unanimity in the use of such fundamental terms as hypersensitiveness, anaphylaxis, and allergy. Common usage (Diagram 1) makes allergy and hypersensitiveness synonymous broad terms. They have just been defined. Anaphylaxis refers to the experimental allergy of animals and clinical allergy to hypersensitiveness in humans.

Kolmer,[3] however, limits the terms hypersensitiveness and anaphylaxis to conditions of altered reactivity to non-protein and protein agents, respectively. Other authors limit the term allergy to hypersensitiveness in humans. Coca[4] admittedly complicates an already chaotic terminology by introducing a new term, "Atopy." He uses atopy to differentiate those apparently spontaneous manifestations of clinical allergy, such as hay fever, asthma, urticaria, etc., which result from an inherited capacity for sensitization, from other forms

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such as serum sickness, dermatitis venenata, and the tuberculin reaction in which heredity apparently plays no part.

Protein sensitization is often used loosely to include hypersensitiveness to non-protein substances. Idiosyncrasy usually signifies, in a non-committal way, an abnormal susceptibility to a food or drug.

– Diagram 2 –

NATURE OF CLINICAL ALLERGY

PHENOMENON	CONSTITUENT REACTORS
Immune Process	Antigen–Antibody (Immune)
Anaphylaxis	Antigen–Antibody (Anaphylactic)
Clinical Allergy	Allergen–Antibody (Allergic)

THE NATURE OF CLINICAL ALLERGY: Allergic reactions are thought to be abortive manifestations of the immune process in that they seem to be mediated by a specific antibody-antigen-like reaction.

In the immune process antibodies are elaborated in the effort to neutralize or destroy harmful bacteria or their toxins. In allergy antibodies are also elaborated against foreign materials which, however, may be inherently harmless. The effort to destroy the foreign material here is misdirected. In both processes there is, among other similarities, a definite local reaction between the tissues and the antigen which is characterized by exudation and derangement of function. For example, exudation is typical in furuncles, pneumonia, and pleurisy, as well as in hay fever, asthma, urticaria, etc.

It will be interesting, perhaps, to review briefly some of the experimental data which determined the trend of this present concept of the nature of clinical allergy:

Koch[5] found that intradermal injections of tubercle bacilli into a tuberculous guinea pig produced a marked violent local reaction in twenty-four to forty-eight hours, with subsequent ulceration and healing but no systemic invasion. An identical injection into a non-tuberculous guinea pig produced systemic tuberculosis promptly, but little local reaction until ten to fourteen days later. The local reaction in the tuberculous guinea pig may be thought of as a manifestation of immunity in that it protected the animal against a dose of tubercle bacilli which would be fatal in a non-tuberculous animal. It must also be considered as a manifestation of hypersensitiveness because a normal non-tuberculous guinea pig could not be made to react similarly.

Hericourt and Richet[6] noted that intravenous injections of eel serum into normal dogs produced no symptoms. But identical injections about two weeks later produced violent reactions ending in death. They called this group of phenomena anaphylaxis. Others soon found that egg white, horse or rabbit serum, and a great variety of other proteins could be substituted for the eel serum without altering the character of the reaction.

Weil[7] showed that a sensitive guinea pig injected with the specific antigen reacted with an anaphylactic shock, but that continued injections of the antigen gradually produced an immunity, or markedly increased tolerance, to increased amounts of the antigen. He found, moreover, that the serum of these immunized animals would passively sensitize other guinea pigs in smaller doses than would the serum of a hypersensitive guinea pig. This capacity for passive transfer paralleled the precipitin content of the immune or sensitized animal's serum.

He further noted that if the injections of antigen were not continued the animals became hypersensitive again. And the precipitin content of the blood decreased. He deduced from these data that the difference between a hypersensitive and an immune animal was merely one of degree of circulating antibody content of the blood serum.

Manwaring[8] was unable to duplicate these results in dogs.

Von Pirquet and Schick[9] first called attention to the similarities between anaphylaxis in guinea pigs and serum sickness in humans who had received therapeutic horse serum. This was the first real correlation of experimental and clinical allergy.

Melzer[10] a few years later compared, by analogy, the bronchial muscle spasm of asthma to that of anaphylactic shock in the guinea pig.

Our present conception of the nature of clinical allergy is that it is fundamentally identical with anaphylaxis. This is based largely upon striking similarities between clinical manifestations of allergy and the following experimentally proven anaphylactic phenomena.

1. Anaphylaxis is an antibody-antigen reaction.

2. The reaction is highly specific.

3. The antigen may be inherently harmless.

4. The antibodies are readily demonstrable and seem to parallel the precipitin content of the blood serum.

5. The sensitizing dose may be quite small.

6. An incubation or latent period follows the introduction of the sensitizing dose.

7. The shocking dose must be larger than the sensitizing dose.

8. Active sensitization is a lasting phenomenon.

9. Sensitization can be passively transferred to a normal individual or to the fetus in utero.

10. Passive sensitization is transient.

11. Multiple sensitization is readily induced.

12. The site of the union between antibody and antigen which results in the anaphylactic reaction has been shown to be upon the tissue cells and not in the blood or tissue juices.

13. The character of the anaphylactic shock differs in different species, e. g., bronchial muscle spasm predominates in the guinea pig, pulmonary artery muscle spasm in the rabbit, and hepatic vessel spasm in the dog.

14. Sensitized animals may be temporarily desensitized. Several methods by which animals may be made refractory to normally shocking doses of antigen are: by injecting large amounts of specific antibodies; by recovery from a sub-lethal anaphylactic shock; by injections of antigen during the incubation or pre-anaphylactic period; by intravenous injections of sub-anaphylactic doses or even of anaphylactic doses given slowly and well diluted; or, finally, by injecting non-specific proteins. The specific desensitization is believed to be brought about by gradual saturation of the sessile antibodies or by so increasing the circulating antibodies that they will neutralize the antigen before it unites with those attached to the sensitized tissue cells.

All of the above characteristics of anaphylaxis have been shown to be applicable to clinical allergy with these exceptions: In clinical allergy the antibody is not readily demonstrable except by passive transfer; the size of the sensitizing and shocking doses are not amenable to comparison; the site of the reaction cannot be demonstrated in vitro in humans as is the case with experimental animals.

There is then considerable evidence upon which to base the assumption that clinical allergy is fundamentally identical with anaphylaxis which in turn is an abortive manifestation of the immune process. This relationship is expressed crudely in Diagram 2.

– Diagram 3 –

ALLERGENS	=	SPECIFIC FACTORS

Protein and Non-Protein
- Foods
- Pollens
- Dusts
- Animal Epidermals
- Bacterial Products
- Drugs
- Miscellaneous..... { Animal / Vegetable / Chemical

Etiology of Clinical Allergy: Substances, to normally harmless quantities of which hypersensitive humans react specifically and with characteristic symptoms, are called *allergens*. They are analogous to the antigens of anaphylaxis and of the immune process. Coca calls them atopens. They differ from true antigens in that allergens, though they commonly are, need not be protein and that their specific antibodies are at present demonstrable only by passive transfer. Evidence is accumulating to show that non-protein substances may become antigenic, and to suggest that the failure to demonstrate allergic antibodies is due to inadequate technique.

Allergens, also called specific exciting factors, are commonly classified, on the basis of their occurrence in our environment, into foods, pollens, dusts, animal epidermals, bacterial products, drugs, and miscellaneous animal, chemical, and vegetable substances (Diagram 3). There are several hundred proven allergenic substances which are almost as varied as the constituents of our material environment. It is also convenient to group allergens in accordance with the manner in which they are brought in contact with the tissue cells which they sensitize and shock. Accordingly, we may think of skin contact, inhalation, ingestion, parenteral or bacterial allergens.

Heredity has already been mentioned as an important factor in the group of apparently spontaneous allergic diseases which Coca calls atopic. Children seem to inherit the capacity

for sensitization, rather than a specific hypersensitiveness, in approximate accordance with the Mendelian Laws. Offspring frequently are not sensitive to the same allergen as the parent nor need they suffer from the same allergic or atopic disease. In short, a father with pollen hay fever may have a child with egg asthma. The important practical fact remains that children with no detectable allergic family history may become violently hypersensitive whereas children with a strong family history may escape.

Age is of interest in that the more complete the inheritance the younger manifestations are apt to appear.

Occupational factors are often of great importance. For example, there are numerous instances of millers sensitive to wheat, farmers to pollens, painters to linseed oil, women to cosmetics, tailors to fur, etc.

– Diagram 4 –

NON-SPECIFIC (AGGRAVATING) FACTORS

Heat	Exhaustion
Cold	Malnutrition
Light	Focal Infections
Emotions	Acute Infections
Constipation	Endocrine Disturbances

Mechanical and Chemical Irritants

Non-Specific (Aggravating) Factors: It is a well recognized fact, emphasized by Vaughan,[11] that a well clothed, well fed, contented, hypersensitive individual tends to react less often and less violently to contacts with his specific allergens. Diagram 4 contains a list of the so-called non-specific exciting factors which seem to be capable of greatly influencing the frequency and severity of the reactions of a sensitized tissue to contact with specific allergens. Duke[12] offers evidence to support his belief that these non-material factors may occasionally be true allergens. The role which they play is very important but is imperfectly understood.

Mechanism of Sensitization: Contact between an allergen and tissue cells having the capacity for sensitization is prerequisite for the establishment of hypersensitiveness. Diagram 5 shows that the necessary contacts are mediated not only by direct contact, inhalation, and ingestion but also by the blood stream, which circulates allergens added to it by injection or absorption from the gastro-intestinal tract, focal infections, etc. It is quite obvious, then, that no tissue in the body is protected from potential sensitizing contacts with allergens. The list of allergic manifestations in the last column of Diagram 7 is ample support for this contention.

In most instances the individual becomes sensitized imperceptibly by normal contacts with normal substances in his environment. Occasionally sensitization follows injections of sera or drugs or prolonged exposures to occupational allergens such as furs, flour, pollens, dyes, etc. Transient sensitizations by transfused blood from allergic donors have been reported, as have rare cases of sensitization to materials completely foreign to the patient's environment.

It is still a mystery why some people become clinically sensitized and others do not. Heredity or congenital predisposition does not fully answer this question. That an individual will become hypersensitive to one foreign material

– Diagram 5 –

MECHANISM OF SENSITIZATION

PREREQUISITE = CAPACITY FOR SENSITIZATION (Often Inherited)

ALLERGENS

reach tissues by:

- Contact—skin, nose
- Inhalation—nose, bronchi
- Ingestion—stomach, intestines
- Absorption from (intestines, foci, etc.) → blood →
- Injection ..... → blood →

nose
bronchi
skin
intestines
g. u.
joints
c. n. s.
bone marrow

and not to another and that certain tissues become sensitized while others do not may often be postulated on physical grounds, as an eczema from contact with silk or wool, or in hay fever from pollens. Food asthma is not so difficult to conceive of in this way, but the focal sensitizations of the skin in egg urticaria, of the joints in certain cases of infectious arthritis, of the brain or meninges in migraine, etc., are very difficult to explain in the light of present knowledge. Of course, these tissues are in potential contact with all blood borne allergens, but why do some tissues become sensitized while others do not? Efforts to explain this on the basis of lowered resistance and functional hyperactivity of the sensitized tissues are vague at best.

– Diagram 6 –

MECHANISM OF ALLERGIC REACTION

Allergen + Antibody + Tissue Cells → Irritating Allergen + Tissue Cells → REACTION = Local / General

Mechanism of the Allergic Reaction: It was postulated above that the allergic reaction is an abortive manifestation of the immune process. If Zinsser's[13] conception of the steps in the immune reaction be merged with Hanzlik's[14] theory of the mechanism of the allergic reaction, the following hypothetical changes may be considered as occurring in the pathogenesis of an allergic reaction (Diagram 6): In a hypersensitive individual allergens are brought to and unite with specific allergic antibodies (atopic reagins of Coca) which are attached to the tissue cells. This allergen-antibody union results in irritating physicochemical changes which stimulate the attached cells. When enough cells are thus stimulated there is a demonstrable local reaction. More extensive stimulation may result in general or systemic manifestations. The reaction destroys the allergen.

The Local Reaction: The local manifestations of allergy are extremely varied (Diagram 7). The consideration of them is greatly simplified, however, by accepting the apparent fact that all of them may be explained in terms of smooth muscle spasm plus exudation. In the walls of tubular structures such as the

– Diagram 7 –

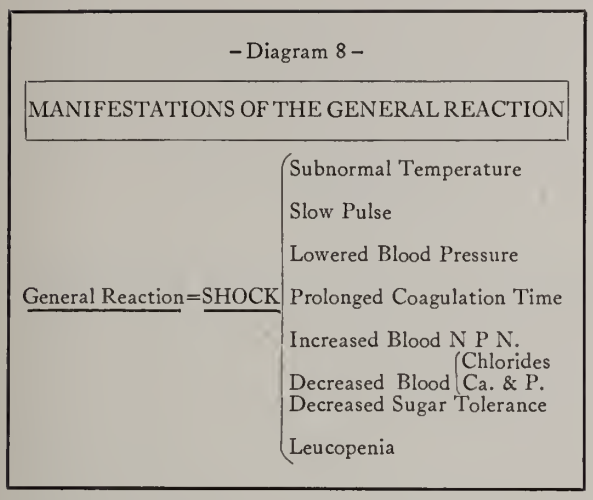
MANIFESTATIONS OF THE LOCAL REACTION

Local Reaction = Smooth Muscle Spasm + Exudation in

- Nose: Hayfever, Rhinitis
- Bronchi: Asthma, Asthmatic Bronchitis
- Skin: Angioneurotic Edema, Eczema, Urticaria
- G. I.: Acute Gastro-Enteritis, Mucous Colitis
- G. U.: Renal Colic, Cystitis, Nephritis
- Joints: Rheumatic Fever, Infectious Arthritis, Serum Sickness
- C. N. S.: Migraine, Meniere's, Epilepsy, Asthenia

bronchi, intestine, and ureter, smooth muscle spasm causes symptoms of obstruction which become more marked when exudation into the lining mucous membranes is superimposed. In other locations exudation is the more prominent phenomenon. In urticaria, angioneurotic edema, hay fever, the exudative arthritides, and perhaps in migraine, Meniere's syndrome, and other conditions, the symptoms appear to be due to periodic abnormal extravasation of fluid. Eczema is often thought of as chronic urticaria. Changes secondary to chronic allergic exudation have been suggested as the cause of many cases of chronic nephritis. If one remembers that the liver is exposed to an infinite variety of allergens in the portal blood it would not be surprising to find that portal cirrhosis is a sequel to repeated allergic periportal edema. The eosinophilia does not lend itself readily to the above explanation. It must not be considered that all cases of all the conditions listed in Diagram 7 are explainable in terms of the allergic reaction.

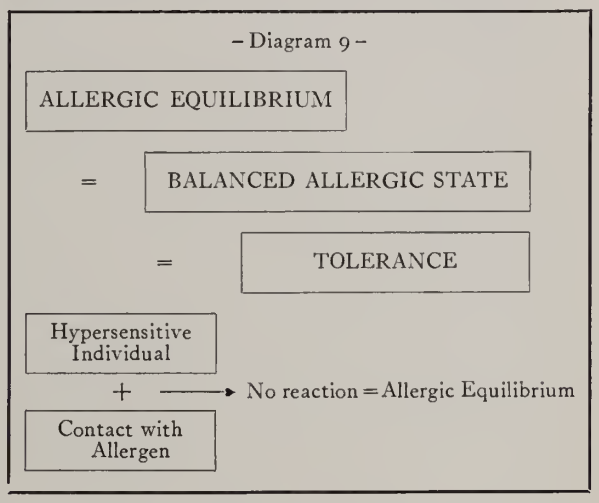
The General Reaction: General manifestations of the allergic reaction are typically (Diagram 8): subnormal temperature, leucopenia, eosinophilia, slow pulse, lowered blood pressure, prolonged coagulation time, increased



non-protein nitrogen constituents of the blood, decreased blood chlorides, an early decrease followed by an increase in the carbon dioxide combining power, occasional decrease in blood calcium or phosphorus, and an occasional lowering of carbohydrate tolerance. It should be emphasized that these general manifestations are not often noted, they are rarely severe and very rarely are all of them present at the same time. When marked the general reaction is called allergic shock.

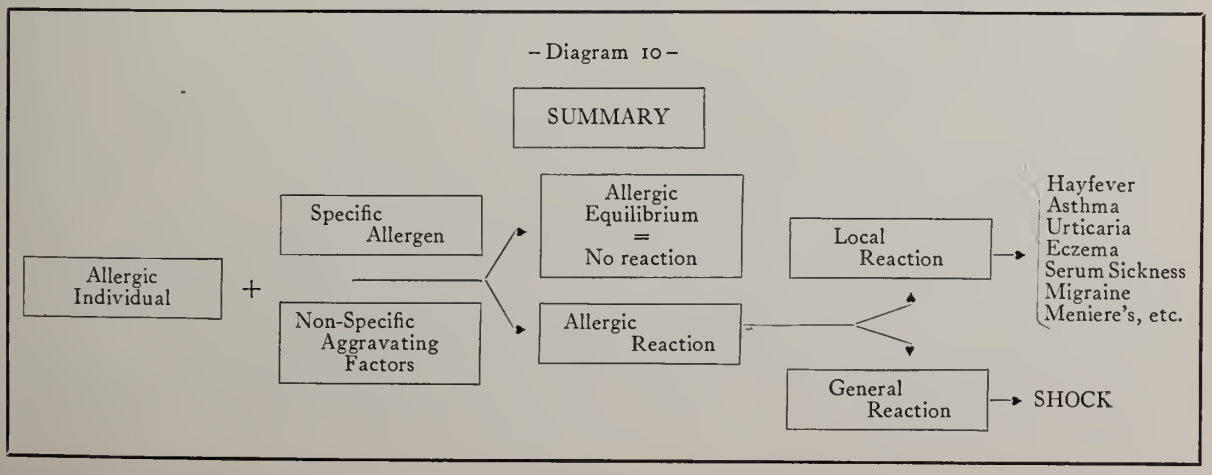
Allergic Equilibrium: It is well known that many hypersensitive persons do not react to every contact with the substance to which they are sensitive. Vaughan[15] and, later, Cohen[16] discuss this subject somewhat as follows:

An allergic individual who is not in contact with his specific allergen is said to be in a *Simple Allergic State*. This is a purely latent condition. If he is exposed to the allergen and does not react he is said to be in *Allergic Equilibrium* or the *Balanced Allergic State*, which is another way of saying that the individual has at the moment a tolerance for the allergen. There seems to be a balance between the factors which inhibit and those which tend to cause the allergic reaction.



The chief inhibiting factors are thought to be refractory or desensitized tissues, inadequate exposure to the allergen, and absence of the non-specific aggravating factors (Diagram 4). The causative factors are apparently an adequate degree of sensitization, an adequate contact with the allergen, with or without the addition of non-specific factors. Cases of multiple sensitization may require contacts with two or more allergens simultaneously. The importance of each factor varies with each case and from time to time in the same case. A reaction may be expected when this balance is upset in favor of the causative factors.

Summary: Clinical allergy may be thought



of as an abortive manifestation of the immune process.

The present conception of the pathological physiology of clinical allergy may be stated briefly as follows:

An individual who has the capacity, probably inherited, becomes sensitized, in almost any tissue of his body, by direct or indirect contacts with one or more protein or non-protein allergens of his environment. These contacts usually occur imperceptibly. Subsequent contacts with the same allergens, perhaps aggravated by non-specific factors, result in an allergic reaction if his tolerance for the allergen is exceeded. The reaction may be local or general or both. The local reaction, which is characterized by smooth muscle spasm plus exudation in varying proportions, is manifested as asthma, hay fever, urticaria, migraine, etc., depending upon its location in the bronchi, nose, skin, or brain. The general reaction is infrequent, when present it is called allergic shock.

Bibliography

1. Balyeat: Allergic Diseases, Their Diagnosis and Treatment, 3rd Ed., F. A. Davis Co., Philadelphia, 1930, page 15.
2. Coca: Tice Practice of Medicine, W. F. Prior, Inc., Hagerstown, Chapter on Hypersensitiveness, Vol. I, 107-198.
3. Kolmer: Infection, Immunity, and Biologic Therapy, 3rd Ed., W. B. Saunders, Philadelphia, pages 598-9.
4. Coca: On the Classification of the Phenomena of Hypersensitiveness, *J. Immunol*, VIII, 163, 1923.
   Relation of Atopic Hypersensitiveness (Hay fever, Asthma), to Anaphylaxis, *Arch. Path.*, I, 96, 1926.
5. Koch: *Deut. Med. Woch.*, XVII, 101, 1891.
6. Hericourt and Richet: *Compt. Send. Soc. de Biol.*, 53, 1898
7. Weil: Topley and Wilson, The Principles of Bacteriology and Immunology, Wm. Wood & Co., New York, 1929, Vol. II, 713.
8. Manwaring: *Idem*, 717.
9. Von Pirquet and Schick: Die Serum Krankheit, Monograph, Leipsig & Wien, 1905.
10. Melzer: Bronchial Asthma as a Phenomenon of Anaphylaxis, *Tr. Ass'n. Am. Phys.*, XXV, 66, 1910.
11. Vaughan: Role of Specific and Non-Specific Factors in Allergy and Allergic Equilibrium, *Jour. Lab. & Clin. Med.*, XIII, 633, 1928.
12. Duke: Asthma, Hay Fever, Urticaria, and Allied Manifestations of Allergy, 2nd Ed., C. V. Mosby Co., St. Louis, Chap. XIX.
13. Zinsser: Textbook of Bacteriology, 6th Ed., D. Appleton and Co., New York and London, page 242.
14. Hanzlik: The Basis of Allergic Phenomena, *J. A. M. A.*, LXXXII, 2001, 1924.
15. Vaughan: Allergic Eczema, *Jour. Lab. & Clin. Med.*, XIII, 24, 1927-28.
16. Cohen: A Simple Chart Based on the Study of Four Hundred Cases Which Illustrate Our Present Knowledge of Allergy, *Jour. Lab. & Clin. Med.*, XIII, 1006, 1927-28.

SELECTING THE TREATMENT FOR HEMORRHOIDS.*

By E. H. TERRELL, M. D., Richmond, Va.

So many papers have been read before this society on the treatment of hemorrhoids, that I hesitate to add another to the already extensive list. Some have advocated certain ambulatory methods while others have suggested modifications and improvements in operative technic. Most of these papers were freely discussed, because every phase of the subject is of interest to the proctologist. Even after all of these exchanges of ideas, however, few of us agree entirely in methods of treatment, under the numerous and varying conditions encountered. This is as might be expected, and it will always remain a problem for each individual to settle for himself. It is not possible for the treatment of hemorrhoids to become standardized, for this will vary, or at least it should, under different conditions and, whenever a choice of several modes of treatment exists, there necessarily will be diversity of opinions.

This paper is presented only as an expression of my views on the subject, these conclusions having been reached after a number of years of study and observation. Many of you, also, I am sure have long ago formed fixed ideas on the subject. I find, however, that there exists some confusion in the minds of young students of proctology in regard to the treatment of hemorrhoids and I hope that what I shall say will be of some assistance to them. If this object is attained, I shall be satisfied.

A word of advice to the beginner or to those who contemplate taking up the treatment of hemorrhoids, I hope is not out of place here. Naturally it is expected that when one undertakes the treatment of any disease he wishes to do it satisfactorily and well. Some unfortunately seem to have the idea that rectal diseases are so simple that little or no study is necessary to treat them successfully. Also, apparently they are unmindful of the fact that they are dealing with a part of the body whose functions are most important and that, while it may be necessary to remove existing pathol-

*Read before the American Protologic Society, in Philadelphia, June 8, 1931.

ogy, except in rare instances it must not be done at a sacrifice of these functions. How can one except to treat hemorrhoids or other rectal diseases without knowing the healthy rectum? He must be familiar with the anatomy and physiology of the parts, and also, some knowledge of its embryology will be of great aid. Before undertaking the treatment of hemorrhoids one should make a study of the etiology and pathology of the different varieties, as well as the various complications often found associated. These associated or complicating diseases always compel a consideration when selecting the mode of treatment for hemorrhoids. There is no place for guess work in the treatment of these diseases, if unfortunate and even sometimes disastrous results are to be avoided. Regardless of the method of treatment employed, the physician must be constantly on the alert and at all times exercise constant care and good judgment throughout, if ideal results are to be expected. Unfortunately, because of poor judgment, inexperience or improper treatment, the end results are sometimes far worse than the original condition. Deep ulcerations, strictures and incontinence are some of the consequences which the proctologist is not infrequently called upon to correct. To reiterate, let me strongly urge those who contemplate doing rectal work to thoroughly prepare themselves before undertaking it. Otherwise irreparable harm surely will result and both they and the profession will be more or less discredited.

There is a need in many localities for men who are properly prepared to do rectal surgery and this, at present, is one of the few specialties in medicine not over crowded.

The busy rectal surgeon is consulted every day, often several times daily, for the treatment of hemorrhoids. With our present knowledge of the disease, he is not justified in advising hospitalization and surgical removal in all cases regardless of the size and character of the tumors. It is expected that he employ an efficient, permanent and safe means, to be sure, but, in my opinion, the least inconvenient to the patient and the most economic measure which promises a cure should be used. In other words, he must select the treatment best suited to the individual case, this opinion being based upon the findings on examination.

In selecting the treatment for hemorrhoids, which may be palliative, operative or ambulatory, depending upon the nature of the existing pathology, many things must be considered, often requiring the exercise of the greatest care and good judgment. When hemorrhoids are strangulated or acutely inflamed with swelling and edema, rest in bed, hot compresses and other palliative measures should be employed. When the attack is over, steps toward obtaining a cure should be considered. Sometimes after the inflammation has subsided, injection of the hemorrhoids may seem advisable. Frequently, however, after such an attack the infection which caused it has only become quiescent, and particularly if the history shows more than one attack, excision of the hemorrhoids with drainage is indicated. Also, when there are recurrences of thrombotic hemorrhoids, the etiology must be considered, if relief is to be obtained. In some, particularly young adults, a thrombosis of the veins at the anal outlet is of frequent occurrence. Examination in such cases will show one or more infected sinuses beneath the muco-cutaneous membrane. These are blind pockets which begin in the bottom of the anal valves and extend downward beneath the covering of the canal to the anal margin. Such an infection is usually with organisms of a low grade and for a time may cause only an irritated and contracted sphincter muscle. When the infection has extended to and involved the adjacent hemorrhoidal veins, these become inelastic and rupture easily if the parts are subjected to a strain. A permanent cure of such a condition is best obtained by an obliteration of these infected areas, that is by incision and drainage. These low grade or attenuated organisms cause external hemorrhoids, fissures and, in fact, most of the pathology found in and near the anal canal. The nature of the disease depends largely upon the parts attacked. Ordinarily these infections are beneath the covering of the canal and not infrequently remain quiescent for varying lengths of time, subject to periodic flare-ups, which may be brought on from constipation, straining at stool, etc. In the intervals between attacks these infections are easily overlooked. Often an apparently satisfactory operation for hemorrhoids fails to give complete relief because a concealed infection was not recognized and no provision made for its removal. This same condition not infrequently appears, also, in the treatment of hemorrhoids by one of the ambulatory methods. Although the usual symptoms of in-

ternal hemorrhoids may have been entirely relieved by the operation or treatment, a discomfort and irritation will sometimes continue on account of an associated infection involving the anal canal. Of course, unless the patient is completely relieved of all symptoms the results are not satisfactory. In such a condition the operation must include not only excision of the hemorrhoids, but removal at the same time of all other associated pathology.

About 50 per cent of the hemorrhoids which come for treatment are of the simple uncomplicated internal variety. These develop very slowly, often existing many years before the usual symptoms of bleeding and protrusion are observed. They are covered by mucous membrane and primarily are the result of a varicosity of the superior hemorrhoidal veins. It is this type of hemorrhoids only which may be treated by injections or some of the other ambulatory methods. It has been my custom for years to treat all such cases, with rare exceptions, by injections of quinine and urea hydrochloride. When these are carefully selected, a proper technic observed and a sufficient number of treatments given, 100 per cent cures can be promised. I have found this treatment safe, having used it regularly and constantly since 1913 without a single serious complication. There have been a few local infections, not more than five or six, which occurred during the course of treatments. In my early experience, occasionally the fluid extravasated beneath the covering of the canal with resulting edema and swelling of the skin at the anal margin. This may result from an over distention of the tissues or from making the injections too low. In recent years this has been a rare complication. The injections when properly made are painless, but some will complain of a dull ache or a feeling of pressure in the rectum, beginning in twenty to thirty minutes after the treatment and lasting about the same length of time. Heat applied in the form of a compress for a few minutes usually relieves this discomfort promptly. It is well to bear in mind that some individuals have an idiosyncrasy to quinine. As stated in a previous paper, I have found one in about five hundred or 1/5 of 1 per cent of my patients have this susceptibility. In these the usual symptom is an irritation of the skin or an urticaria which comes on promptly after the injection. This is, at least, a very annoying complication. It is well when giving the first treatment to inject only a few drops of the solution until convinced that an idiosyncrasy to the drug does not exist. Of course, if an allergic reaction occurs, the treatment should not be repeated. In a few, with this constitutional peculiarity, I have resorted to the use of hydrochloric acid injections, as recommended by Dr. Hanes, with good results.

Recently I have used glucose and sodium chloride in the treatment of four cases of internal hemorrhoids. In each of these some sloughing occurred after the injections. In one there was a constant oozing of blood for a week or more. This remedy may be preferred in varicose veins of the leg, but I believe it is not a very safe remedy in hemorrhoids, because of its tendency to cause a slough. Whenever sloughing occurs there is danger of hemorrhage. Contrary to the opinion of some, quinine and urea, in the usual strength of 5 per cent, does not cause a slough, unless the hemorrhoid is greatly over distended.

These treatments should be repeated at intervals of four to seven days until all the hemorrhoidal tumors have disappeared, that is, until none can be found on examination. Failure to obtain a permanent cure is often due to insufficient treatment. I have found recurrences rare after once the tumors have been completely removed. An exception to this rule is in internal hemorrhoids occurring in young persons under twenty or twenty-five years of age. Some of these seem to have an inherent tendency toward a varicosity of the hemorrhoidal veins, and often of other veins, as well. In such patients an excision of the hemorrhoids is to be preferred.

In my opinion, there are many reasons why the proctologist of today should use one of the non-surgical methods of treating simple internal hemorrhoids, and also from my experience, injecting them is the easiest, safest and most efficient means yet devised. Until a few years ago, only the surgical removal of hemorrhoids was worthy of consideration. The simple mention of injecting hemorrhoids would bring forth severe condemnation. The chief reason for this feeling of antipathy toward this was the fact that originally these treatments were almost entirely in the hands of the charlatan and advertising quack. Now, it and also certain forms of electric treatments are advocated by many of the most reputable physicians both in this country and in Europe.

These ambulatory methods are gaining rapidly in favor and will continue to do so, I believe, although one still hears occasionally some opposition to them. Recently, I saw an adverse criticism from one of our own members in regard to the injection treatment. I think he has never used it, but, if so, not enough to be a competent judge. Every doctor must find at times, I think, those suffering from hemorrhoids on whom operations are not advisable. I have seen many times patients almost exsanguinated because of bleeding hemorrhoids. Any operative procedure in a patient in such a state carries with it considerable danger and is to be avoided, if possible. Rarely does an injection of a few drops of quinine and urea fail to stop, promptly, bleeding from an ulcerated internal hemorrhoid.

I am of the opinion that the proctologist of today who does not inject hemorrhoids, or at least use some form of office treatment in the simple cases, will soon find that his patients are going elsewhere. He may be sure that the public is interested in any curative measure which avoids the necessity of hospitalization and operation. The specialist who advises surgery as the only means of curing hemorrhoids has little or no advantage over the general surgeon. While it may be conceded that he has a superior knowledge of the subject, the patient often does not stop to consider this. He will be inclined to consult the specialist because his friend or neighbor has been cured by him without an operation. The layman, as a rule, knows of only one disease of the rectum and that, of course, is piles or hemorrhoids. Abscesses, fistulas, fissures, polyps and, in fact, every disease to which this part of the body is heir is brought with the hope that it may be cured without an operation. When examination reveals one of these purely surgical conditions, the physician will then describe to the patient the nature of the disorder and the kind of operation necessary to produce a cure. If this is done in a convincing manner he is, in the majority of instances, engaged then and there to perform the operation. In other words, I am convinced that one's surgical work, in rectal diseases will be greatly enhanced, as well as his office work, if he has acquired the reputation of treating hemorrhoids (in suitable cases) by the injection or some other satisfactory ambulatory method.

Because a form of treatment is pleasing to the patient or because it is to the advantage of the physician to use it are not of themselves sufficient reasons for adopting it. If, however, in addition to the foregoing it is shown that the treatment is a safe one, economical and produces a positive and permanent cure, with little or no loss of time, then surely there is little else to say in its favor.

If one expects to obtain uniformly good results from the injection of hemorrhoids, care must be used constantly in the selection of cases. Only the simple uncomplicated internal hemorrhoids will respond satisfactorily to this treatment and under no circumstances should it be used in others.

Medical Arts Building.

THE DANGEROUS PRE-SCHOOL AGE AND OUR OBLIGATIONS.*

By L. M. HINES, M. D., Drill, Va.

Interest in the child and child-welfare has been evident at all ages throughout history but it is only in modern times and during the past few years that the child has really come into its rightful place and been recognized and treated as the future hope of every Nation. In the early Spartan history the child was considered worth saving only if he showed signs of being strong; if he were weak and feeble he was put to death. With the establishment of Christianity in Rome dates the first recognition of the child as an individual.

Living as we do in this twentieth century, when preventive medicine plays such an important role not only in our daily lives but in human welfare and the progress of the Nation as a whole, it becomes the honor bound duty of every true physician to keep a watchful eye upon the young, that physical defects may be detected early and corrected if possible, in order that they may not cause trouble in later life.

In 1909 President Roosevelt called a "White House Conference" on the problem of child-welfare. At this time it was decided to create a Children's Bureau in the Department of Labor. In 1912 the bill for this Bureau was signed, and the Bureau was given an appropriation of $25,000 for the first year, their main object being to investigate "all matters pertaining to the welfare of children and infant life." Then in 1917 President Wilson, at the

*Written at request of chairman of the Child Welfare Committee of the Medical Society of Virginia.

suggestion of the Children's Bureau and the Woman's Committee of the Council of National Defense, inaugurated what has proven to be in all probability the most effective plan for stimulating interest in child-welfare throughout the Unted States. In approving this plan President Wilson said, "Next to the duty of doing everything possible for the soldiers at the front, there could be no more patriotic duty than that of protecting the children, who constitute one-third of our population. The success of the efforts made in England is evidenced by the fact that the infant death rate, during the second year of the war, was the lowest in her history. Attention is now being given to education and labor conditions for the children by the legislatures of both France and England, showing that the conviction among the Allies is that protection of childhood is essential to winning the war. I am very glad that the same processes are being set afoot in this country, and I heartily approve the plan of the Children's Bureau and the Woman's Committee of the Council of National Defense for making the second year of the war one of united activities on behalf of children, and in that sense a children's year." With the closing days of the war the American Red Cross and the various Social workers all fell in line, and on April 6, 1919, a Nation-wide campaign for weighing and measuring young children was begun, and it is impossible to evaluate the far-reaching effect this movement has had. Just as Science has developed by leaps and bounds during the past decade, so has interest in the pre-school and school child.

From the time a child is weaned until it enters school is perhaps one of the most dangerous periods of its entire life, simply because it does not have routine physical examinations, and the mother may be greatly surprised when she accompanies her supposedly healthy child to a pre-school clinic to find that it has some physical defect.

Approximately one-third of the children entering school for the first time each year have been found to need medical attention before they can profit by the educational opportunities offered them. We can readily see what an economic loss this would be, besides a great handicap to the child.

It was not, however, until 1927 that the Division Superintendents of Virginia Schools passed a resolution calling upon The Medical Society of Virginia "to undertake the study of the best means of preventing or correcting the bodily defects of school children." The Society responded by appointing a committee who are working on a plan whereby children entering school for the first time may be examined early in the school year and have any defects corrected before school begins.

We have in this State what is known as the "five point child campaign" which is the minimum standard at present. The West law which was passed in 1920 requires that all school children have a physical inspection on these five points:

1. Vision,
2. Hearing,
3. Teeth,
4. Throat,
5. Weight.

Now, in order to receive a Five Point State certificate, the child must be able to read line marked 20 on the Snellen eye testing chart at a distance of twenty feet, each eye being tested separately, or have glasses properly fitted. The illiterate eye testing cards are used for pre-school children. They must be able to hear the conversational voice at a distance of twenty feet, each ear being tested separately. The teeth must be reasonably clean, with no exposed roots or unfilled cavities. There must be no symptoms of trouble with tonsils and adenoids. The children must not be 10 per cent or more under weight nor 20 per cent or more over weight. This campaign has been getting wonderful results but I think we should follow the example of other state health departments and make our standard a nine point child, by which we mean, in addition to the above five points, that they should have their birth certificates, have correct posture, be successfully vaccinated against smallpox and immunized against diphtheria.

This program may be successfully carried out through the Division Superintendents of Schools, the teachers, the Public Health Nurses, the local boards of health, and the family doctors. Early in the school year, survey forms are sent out from the Division Superintendent's office to the teachers in every school. These include the name of the beginner, name and address of parents and name of family physician. These survey forms are classified and each doctor is visited to arrange for a pre-school clinic, to be held either in May or June in the doctor's office, and the usual

office fee should be charged where the parents are able to pay it. Routine physical examinations are made in each case and the results recorded on white cards to be kept by the physician for reference, on blue cards to be given each child to hand his teacher on the first day of school, and a summary sheet for the worker.

We as general practitioners throughout the State can render a great service by helping with these pre-school clinics and I think it best, when possible, to have both parents present while examining the child, so that each physical defect may be pointed out and its dangers emphasized at the time. Of course all abnormal findings are recorded, treatment being advised in some and urged in others.

Each child should have a very thorough and complete physical examination. The day perhaps is not far remote when it will be necessary to have, in addition to this, blood examinations and tests for intestinal parasites. Then and not until then can we hope to refer to our school teachers for cultural and educational training 100 per cent perfect children.

PRESENT CONCEPTS OF THE FEMALE SEX HORMONES AND THEIR CLINICAL APPLICATION.*

By E. C. HAMBLEN, M. D., University, Va.

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There is no field in medicine which has been so contradictory, so disappointing, or so confounded with fallacious conclusions as that of endocrinal therapy. Results have been interpreted, in many instances, as being due to organotherapy, when, in reality, they were only accidental. Also, not infrequently, our practicing clinicians have been led far astray by the extravagant and often unwarranted claims of the over-enthusiastic, as well as of the unscrupulous, pharmaceutical chemists.

As a result of the studies of Allen and Doisy,[1] Frank,[2] Aschheim and Zondek,[3] Corner,[4] and numerous others, our concepts of female sex physiology have undergone fundamental change. We have learned that the role of anterior hypophysis as a sex gland is an important one; we have ascribed to it the title "motor," or more correctly, perhaps, "regulator of the ovaries."[5] The interrelationship of the thyroid is still chiefly speculative.

A brief summary of our knowledge, at present, of the active hormones in female sex physiology is given.

Anterior Hypophysis: There seems to be quite good evidence to assume the existence of four hormones from the anterior lobe of the hypophysis,[6] Two of these hormones are strictly of a general character, one influencing growth and one influencing metabolism. The other two hormones (Prolan A and B) are described as sexual in function.

Recent work by several investigators as well as the personal experience of author seem to indicate that both Prolan A and B constitute one hormone—the "master-sex anterior hypophyseal hormone." This hormone is said to be non-sex specific, stimulating both ovaries and testes.

Prolan A has been shown to regulate the development and maturation of the Graafian follicle. Stimulated by its action, the follicle elaborates its characteristic hormone—the follicular (female sex) hormone. With the beginning secretion of the follicular hormone, the development of other follicles is said to be inhibited, thus, possibly, explaining uni-ovulation.

Prolan B regulates and controls the formation of the corpus luteum. The corpus luteum, under its regulation, is said to elaborate its specific inhibitory hormone.

These two hormones, therefore, act directly upon the ovaries and their effects are due to responses from the ovaries. They are, of course, without action where bilateral oophorectomy has been done. Their occurrence in the circulating blood in pregnancy, after the sixth to eighth week, has been described. They disappear rapidly from the blood with the termination of pregnancy or with intrauterine death of the fetus. Urine in pregnancy contains these hormones in quite high concentration and the Aschheim-Zondek pregnancy test[7] is based upon their identification. The physiologic hypertrophy of the mammary glands and the process of lactation are said to be at least in part regulated by these hormones.[8]

Ovary: The *follicular* hormone, which is formed by the Graafian follicle, is, perhaps, also produced in pregnancy by the placenta, for it occurs in the organ in large quantities. After the sixth to eighth week of pregnancy it is found in the circulating blood and in the urine in large quantities. It has been shown to undergo cyclic changes in the circulating blood during the men-

*Delivered before the Albemarle County (Va.) Medical Society, March 5, 1931.

strual cycle; its concentration gradually increases until the onset of menstruation, when it rapidly disappears from the blood stream. It has been shown to be responsible for the congestive, premenstrual phase of the endometrium and, in lower animals, to be definitely concerned with the development of the primary sex characteristics. The action of this hormone is directly on the lower genital tract and, consequently, its action is not influenced by spaying.

The *corpus luteum* hormone ("progestin") is said to inhibit ovulation and to be responsible for the progestational proliferation of the endometrium. In pregnancy, it is said, in part at least, to protect the uterus from the oxytocic principle of the posterior lobe of the hypophysis; to aid in the general nutrition of the product of conception; and to regulate the proliferation of the decidua.

Thyroid: Thyroxin, thyreoglobin or some active principle of the thyroid gland is closely interrelated with the female sex physiology. The nature of this mechanism is not known.[9]

Preparations of These Hormones Available for Clinical Trial

No preparation corresponding to the Prolan A of Zondek has been made available for clinical trial. It is said to be very unstable.

We have been furnished an anterior pituitary luteinizing hormone by Parke, Davis & Co. from their experimental laboratories. This has been bio-assayed on the basis of the ovarian responses attributed to Prolan B (the production in the ovaries of immature mice of "Blutpunkte" or of excessive luteinization). It is prepared by the extraction of the urine of pregnant women.

The isolation of the follicular hormone in crystalline form by Doisy and his co-workers[10] has given us a very active and stable preparation of this hormone for clinical trial. It is prepared also from the urine of pregnant women and was named "theelin" by the discoverers. Its physiological activity is standardized on the basis of its production of estrus in ovariectomized sexually mature rats. We have been supplied theelin for use by Parke, Davis & Co.

There have been no preparations of the active corpus luteum hormone for clinical trial.

Clinical Application of these Hormones: The possible clinical value of these new active, potent, standardized hormones has offered hope in a field which appeared quite hopeless. The proper trial of these hormones requires a careful and thorough study and selection of cases and the establishment, if possible, of the gland or glands at fault.

Each case of possible endocrinal menstrual dysfunction should receive a most careful history with particular attention to—prenatal health of mother; patient's infant developmental history; menarche; presence or absence of irregularities; delayed menses; all the characteristics of the subsequent menstrual cycle should be noted. A most painstaking physical examination should be done with special regard to—abnormalities of stature; gracility or thinness of bones; the height, weight, age ratio; stigmata of deviation; and any abnormalities of facies, posture or response to questions. The secondary sexual characteristics should be carefully studied—voice, amount and distribution of hair, texture of skin, nails, and amount and distribution of subcutaneous fat. Special examinations should include—B. M. R., differential cell count, X-ray of sella turcica, visual fields charting, sugar tolerance test, Mosenthal test, blood calcium, blood cholesterol, and the Frank test for the female sex hormone in the blood.

In selecting cases for endocrinal treatment, these facts are of importance. Irregularities at the time of menarche or delayed menarche are danger signals and are often reflected in adult life as hypoplasias often associated with sterility. Dysfunctions of the pituitary, thyroid and ovary are, in the order mentioned, the most common causes of disturbances of the menstrual function in adolescence. Various grades of glandular dysfunction occur, ranging from the slightest aberration from normal to the extreme conditions of gland deficiency.

Treatment

The treatment of these cases should be of two types: 1. adjuvant, and, 2. specific.

In the adjuvant treatment, deranged metabolism is corrected. A well-balanced diet, especially in its mineral and vitamin constituents, should be assured. Anemia should be corrected. Regularity in habits and normal sexual psychology are essential.

For specific treatment, at present, our mainstays are thyroid substance, active follicular hormone and an active anterior pituitary hormone.

Thyroid substance is indicated where there is hypothyroidism. It is the only endocrinal preparation, in the light of our present knowledge, which is active by mouth. Enteric coating may allow a smaller dosage. The dosage must be judged entirely by the response of the given individual, as there is wide variation in individual tolerance. Cases receiving thyroid substance should be carefully followed with frequent B. M. R. determinations and weighed frequently.

The follicular and the anterior pituitary hormones must be given by the hypodermic route. Recent work has shown the absolute inactivity of the many preparations of both which have been administered by mouth. Whether we were using "replacement" treatment with the follicular hormone, or "stimulative" treatment with the anterior hypophyseal hormone, our general scheme of administration has been similar. The hormones are administered in doses of 100 rat units daily for two weeks, followed by a rest interval of two weeks. The administration of the hormone is given during the intermenstrual phase, if possible. Variations in the time of administration and in the dosage will probably come with our further knowledge of these hormones.

Cases Treated

We have treated various types of menstrual disturbances with these hormones.[11] Our cases have included those of menopause, natural and artificial, oligomenorrhea, amenorrhea, primary and secondary and idiopathic menorrhagia. Our most gratifying results have been obtained in those cases which represent hypofunctions—menopause, amenorrhea and oligomenorrhea. The results of these treatments have been encouraging. Several brief case reports are given as illustrative of some of our cases:

Case I. White girl, age 15, complained of scant flow and dysmenorrhea. Pelvic examination showed moderate hypoplasia of internal genitals. She received two series of theelin, with two normal menstrual periods, of three days duration, free from pain.

Case II. A white girl, age 16, gave a history of absolute menstrual irregularity, with frequent intervals of amenorrhea for four to six months. The general physical examination was unimportant, except for moderate hypoplasia of internal genital organs. The dates and duration of her recent menstruation are—December, 1929, 4 weeks; May 7, 1930, five days; July 12, 1930, four days. Treatment with follicular hormone was begun August 26, 1930. Patient menstruated September 30, 1930, four days; November 2nd, four days; December 1st, four days; the period due December 29th was missed; patient menstruated January 25th, four days. Subsequent periods have not been reported.

Case III. A white woman, 24 years of age, gave a history of one year's amenorrhea. General physical examination, B. M. R. and X-ray of sella turcica were normal. Patient was given a series of anterior pituitary hormone, at the conclusion of which she had a normal menstrual flow.

Case IV. A white woman, age 23, who had been married for five years, gave a history of having never menstruated. Her symptoms include—absence of libido, dry skin, and obesity. Physical examination revealed—hypoplasia of the breasts and external genitalia, sparse and adolescent distribution of the pubic hair, moderate anemia of the chlorotic type. B. M. R. and X-ray of sella turcica were normal. Patient was given a series of anterior pituitary hormones during which she had a normal menstrual period. She received two subsequent series followed by two normal menstrual periods.

Case V. A white woman, age 46, complained of extreme nervousness, emotional instability, and severe headaches, following cessation of menstruation six months previously. After receiving theelin for two weeks, she obtained practically complete relief from her symptoms.

Case VI. A white woman, age 44, complained of nervousness, hot flashes, emotional instability, and various anesthesias following radium therapy three years ago, resulting in menopause. She received theelin daily for three weeks with marked improvement of all symptoms, but suspended treatment when she began to suffer with lower abdominal cramps, interpreted by her as being a possible return of menstruation.

Case VII. A colored woman, 21 years of age, had a hysterectomy and bilateral salpingo-oophorectomy, July 17, 1930, and complained of extreme nervousness, asthenia, loss of appetite, and loss of weight following operation. She received theelin for three weeks, with complete relief from all symptoms.

Case VIII. A white woman, 21 years of age, complained of menstrual irregularity as-

sociated with frequent intervals of amenorrhea, lasting three to four months, menstrual nose bleeds and excessive weight. Physical examination revealed marked hypertrichosis, masculine distribution of pubic hair, stiff bristles on chest, and moderate hypoplasia of internal genitalia. Weight 167 pounds; B. M. R.—15 per cent. She was treated with anterior pituitary hormone and thyroid extract. She was given an obesity diet. She has, since beginning treatment, had two regular normal menstrual cycles. At present her B. M. R. is +9 per cent; her weight is 149 pounds. There have been no nose bleeds.

Comments. Our results have been sufficiently encouraging to warrant further careful and painstaking study and to offer hope for the future in a field which a few years ago seemed quite hopeless. Further study, particularly as to the time of administration, as well as of the dosage of these hormones, is very important. Our most satisfying results have been in the relief of the symptoms of the menopause, either natural or artificial. Results have been encouraging in the treatment of selected cases of amenorrhea and of oligomenorrhea.

References

1. Allen, E., and Doisy, E. A.: *Jour. Am. Med. Assn.*, 81:819, 1923.
2. Frank, R. T., and Goldberger, M. A: *Jour. Am. Med. Assn.*, 86:1686 (May 29), 1926; ibid, *Jour. Am. Med. Assn.*, 87:1719 (November 20), 1926.
3. Zondek, B.: *Med. Klin.*, 23:463, 1927; Zondek, B., and Aschheim, S.: *Arch. f. Gynäk.*, 130:1, 1927.
4. Allen, W. M., and Corner, G. W.: *Proc. Soc. Exper. Biol. & Med.*, 27:403, 1930.
5. Kraul, L.: *Am. Jour. Obst. & Gyn.*, 21:301, 1931.
6. Zondek, B.: *Klin. Wchnschr.*, 9:245, 1930.
7. Zondek, B., and Aschheim, S.: *Klin. Wchnschr.*, 7:8, 1928.
8. Corner, G. W.: *Am. Jour. Physiol.*, 95:43, 1930.
9. Cooke, W. R.: *Jour. Sou. Med. Assn.*, 24:20, 1931.
10. Doisy, E. A., Thayer, S., and Veler, C. D: *Am. Jour. Physiology*, 90:329, 1929; ibid., *Jour. Biol. Chem.*, 86:499, 1930.
11. Hamblen, E. C: *Endocrinology*, 15:184, 1931.

Editor's Note:—Since submitting this article, Dr. Hamblen has become a member of the Medical Staff of Duke University Hospital, Durham, N. C.

IRRADIATION IN THE TREATMENT OF MALIGNANT TUMORS OF THE URINARY TRACT.*

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A number of therapeutic agents are at our disposal for the treatment of malignant tumors of the urinary tract, among which may be mentioned irradiation by radium and Roentgen ray and surgical procedures, including excision either with the scalpel, or radio-knife, and diathermy. The selection of the proper method or procedure to be used in a given case is just as essential as the correct means of administration. Such selection is dependent on a number of factors; for example, the location and extent of the neoplasm, its pathologic characteristics, whether or not it has been treated previously, and the age and general condition of the patient.

There is considerable difference of opinion concerning the significance of these various factors as well as the efficacy of radiation therapy, and it is for this reason that we have attempted to present a discussion of the subject, the scientific principles upon which it is based, and the therapeutic effects and results that may be expected. Our opinions and conclusions are based on the results of our own group of cases, and also those of others who have reported in recent medical literature. For the sake of brevity, the report of individual cases and statistics will be omitted.

The biological effect of radiation on living tissue was noted very shortly after the discovery of the X-ray by Roentgen in 1895 and radium by the Curies in 1898. Since this time epochal advances have been made in the use of Roentgen ray and radium therapy in the treatment of malignant neoplasms in general, and particularly in the field of urology.

This has been brought about by the combined efforts of urologists, surgeons, radiologists, pathologists and physicists, so that today, with improved methods of technique in applying irradiation, a new chapter is being written in the treatment of malignant tumors of the urinary tract.

It was soon found after the discovery of the radio-active agents that embryonal, or undifferentiated tissues in general, were more susceptible to radiation than the more highly differentiated tissues, and it is upon this selective action of radiation that our present system largely depends.

There are other biological factors, however, that undoubtedly influence the radio-sensitivity of tumors. Tumors may be destroyed by the direct action of radiation on cell structure, or on their blood vessels, thereby interfering with their nutrition. If these are young, newly

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formed vessels, such as occur in highly cellular, rapidly growing and highly malignant tumors, the reaction to irradiation may be very prompt and effectual, since the young endothelial cells succumb very readily to radiation.

The environment of the tumor cells may also influence their susceptibility to irradiation, probably largely through an effect on their nutrition. For instance, oft-times the primary tumor, when it depends entirely upon its own blood supply for nutrition, may be very readily destroyed by irradiation, whereas the cells derived from the same growth which metastasize to the regional lymph nodes and derive their nutrition from the lymph may be very resistant. Therefore, if the tumor cells of metastatic lesions in regional lymph glands are relatively more susceptible to the direct effect of radiation than the normal tissue cells, they can be destroyed by irradiation. If, on the other hand, they are more resistant, they cannot be destroyed without producing necrosis of the normal tissues in which they are lodged.

This is also true of primary highly differentiated resistant tumors. Doses of radiation sufficient to cause death of the tumor cells cause necrosis and ulceration with involvement of the surrounding normal tissues. Therefore, in tumors of these types, and also those that are so large or extensive as to make complete destruction impossible, we strive to produce large amounts of fibrous tissue about the individual cells or the entire tumor, thereby choking off the tumor and restraining its growth.

Since the method of treatment and the type of reaction depend largely upon the cellular structure, blood supply and environment of the tumor, it is obvious that a biopsy, if available, should be of material assistance and may aid materially in estimating both the degree of malignancy and of radio-sensitivity.

Often, however, a biopsy is impossible or inadvisable, and we have to rely on our judgment and previous observations. As yet, there is still a justifiable conflict of opinion regarding the relative merit of the physical agents and surgical procedures in some of the extensive malignant lesions of the urinary tract. In some instances, the greatest prospects of cure and of palliation in the truly inoperable lesions may be expected through the combined use of both. Therefore, the surgeon, or urologist, and the radiologist must cooperate in order to obtain the best results, as the proper combination of surgery and radiation requires a thorough knowledge of the uses and limitations of both methods.

If neoplasms of the kidney are diagnosed early enough, radical surgical removal is the method of choice and will give a comparatively high incidence of cures. After such a radical removal, the operative field including the perirenal fat and regional lymph nodes and all metastatic lesions, if any, should receive adequate high voltage Roentgen radiation, the object being to influence any glandular, bone or visceral metastasis that may have developed, or to ward off metastases from tumor cells that may have been left behind at operation. Owing to the possible debilitating effect of such treatment, it should be postponed ten days or more after operation. Subsequent courses of radiation therapy may be very advisable on the doctrine of giving the patient every chance.

The so-called hypernephroma represents the most common tumor of the adult human kidney, which, according to the hypothesis of Grawitz, originates from misplaced fragments of adrenal cortex, which may remain quiescent or become malignant.

One of the most striking features of the hypernephromata is their tendency to invade the branches of the renal vein and metastasize to the lungs, bones, liver, and other portions of the body. Therefore, a case suspected of being this type of tumor should have a thorough radiographic examination of the chest and bones before operative procedure is undertaken.

Second in importance and frequency among renal neoplasms are the carcinomata, which are of several types. These tumors, as in the case of the hypernephromata, should be dealt with surgically whenever it is possible. However, most of these cases should receive irradiation either primarily or post-operatively, since recurrences and metastases are rather common.

In those cases in which radical removal is impossible, or inadvisable, as an initial procedure, high voltage Roentgen irradiation properly administered will sometimes render the condition amenable later to surgery by shrinking, or partially destroying the tumor.

In the far-advanced inoperable cases, radiation therapy is about the only means we have at our disposal for helping these hopeless individuals. Pain, which may be a distressing symptom, may be greatly benefited by the irradiation. While we may not hope for perma-

nent cure in this group of cases, yet, in most instances, we can make the patient more comfortable and prolong his or her life, which certainly makes it worthwhile.

In peri-renal and retro-peritoneal tumors, which are usually sarcomatous, the use of radiation therapy has proven of great value. Relief of symptoms and prolongation of life are seen in most cases, and some patients remain in good health for long periods, the growth becoming shrunken and fibrosed.

The papillomatous growths of the kidney are of considerable interest because they are so apt to cause transplants in the ureter and bladder, and it is for this reason that the kidney should always be investigated when papillomatous growths are discovered in the bladder. The majority of tumors of the bladder are papillomata, or carcinomata, of various types, and of these the papillary neoplasms are the most common form.

While neither time nor space will permit a lengthy discussion of these tumors, yet experience has proven that, in order to treat a bladder tumor successfully, certain factors concerning that particular tumor must be known. For instance, whether a papilloma is benign or malignant, is very important. In carcinoma, whether papillary or other type, it should be determined whether it is infiltrating, or non-infiltrating, operable or inoperable, and whether or not metastases are present, either in the adjacent lymph glands or at some distant point.

Practically all tumors of the bladder may be regarded as being potentially malignant because they all have a tendency to recur. The diagnosis of bladder tumors is usually founded on the gross and cystoscopic characteristics of the tumor rather than on the histologic structures, but, when possible, tissue should also be removed for biopsy.

However, an experienced cystoscopist can determine malignancy of the bladder in a fairly large percentage of cases from his examination, plus the clinical evidence, the cardinal symptom of which is bleeding. Occasionally the hemorrhage is so severe, or the bladder is so irritable or so contracted, that inspection with the cystoscope is impossible, and in such cases cystography will generally help to establish the diagnosis.

A normal bladder will show an outline usually circular, or oval, with smooth well-defined walls, whereas, in case of a tumor, there will be a filling defect and irregularity corresponding to the portion of the bladder wall that is diseased. If the tumor is large, occurs in an older patient, and is irregular in outline, especially if it presents a broad base, one would think first of malignancy. If it is small, smooth and pedunculated, one would think of a papilloma which would probably prove to be benign.

In the treatment of papillomata, fulguration, or electro-coagulation, has been the method of choice if the tumor is not too large and not situated too near the internal sphincter of the bladder. On the other hand, this method has been found practically useless in the treatment of carcinomata. When there exist papillary tumors which are fungating and developing rather rapidly and have a very good blood supply, the condition is ideal for radiation therapy, either with high voltage X-ray alone, or in combination with radium, if this agent is available.

When the tumor, even though malignant, is not of the infiltrating type, and is so situated in the bladder that it can be resected radically, such is undoubtedly the best procedure, supplemented by high voltage Roentgen irradiation in adequate doses.

But for the infiltrating type of tumor, only about ten per cent (10%) of which are either sufficiently circumscribed, or so situated as to permit a successful radical resection, we feel that radiation therapy is the method of choice, for the following reasons: (1). The immediate mortality rate is lower. (2). The prolongation of life is probably greater, and (3). The economic result is probably better. Needless to say, the mortality following bladder resection, especially when the base, trigone, or ureteral orifice is involved, is often very high.

As for the remaining primary infiltrating carcinomata of the bladder that are recognized as inoperable, and also the secondary malignancies arising from the uterus, rectum or prostate, there is not much alternative, for these must be treated, if at all, by radiation, or some combination of destructive process plus radiation therapy. Naturally, very few brilliant results can be expected under the circumstances, yet the results, even in this unfortunate class of patients, are sufficiently encouraging and gratifying to make it worthwhile to treat every case. Hemorrhage and pain are generally more

or less relieved, and occasionally the tumor completely disappears. Such a tumor, even though apparently destroyed, may recur, and, for this reason, the patient should be kept under close observation and should frequently have cystoscopic examination by a competent cystoscopist, so that any recurrence may be recognized early and treated. We have found that we get better final results, if we plan to give two, three, or more series of radiation treatments at suitable intervals.

In the use of high voltage Roentgen radiation, the greatest caution should be observed in measuring and directing each dose, and in estimating the cumulative effect of these doses —for upon these factors, our end results largely depend. Realizing that the details of Roentgen technique will prove uninteresting to those of you who do not specialize in radiology, I will only briefly mention the most important points. Our present technique is based on high voltage (200 KVP), heavy filters, and the so-called fractional dose method, which is a divided series of radiation treatments given within a period of about ten days to three weeks, aiming to keep up a continuous radiation, or saturation, within the limits of skin tolerance. The object of this is to produce the desired biologic change in the neoplastic tissue that is being treated. It is of paramount importance to adhere strictly to some technique possessing a certain degree of flexibility as well as accuracy, and yet deliver to the tumor area the maximum amount of radiation. The necessity of a flexible technique is to allow adjustments to the requirements of a particular case, as it is generally agreed that there is a variability of sensitivity to radiation in different individuals as well as in different tumors. Therefore, each case should be thoroughly studied and treated as an individual entity. and for this reason the clinical judgment and experience of the radiologist plays an important part.

Dr. James Ewing stresses the importance of adequate dosage, and goes so far as to state that the doses of radiation delivered by the average radiologist, or surgeon, are too small to accomplish the desired result. It is, therefore, important to know the quality and quantity of radiation, as well as the underlying pathology, so that the proper dosage or radiation intensity will be given.

To control these factors, we have sphere-gaps and meter controls which are essential, but, in addition, X-ray therapy machines should be calibrated and standardized at regular intervals by careful ionization measurements conducted by a competent physicist. The intensity output should be estimated in terms of the international roentgen or "r" unit. Only in this way can we arrive at the correct dosage for a given case.

Lastly, frequent examinations of the blood should be made to determine the effect of radiation upon the white blood cells, in particular, although estimation should also be made of the red blood cell count and hemoglobin. The number of white blood cells is reduced more rapidly following prolonged radiation therapy than is that of the red blood cells, and it is considered rarely safe to treat a patient further when his white cell count has fallen below 4,000.

In conclusion, an attempt has been made in this paper to present briefly the important role played by radiation therapy in the treatment of malignant tumors of the urinary tract. It is not offered as a panacea for all lesions, nor is it the method of choice in the treatment of all conditions, but it is our opinion that when properly, carefully and judiciously used, either alone, or in combination with surgery or other physical agents, radiation therapy is a potent factor in the treatment of urologic neoplasms. Statistics have purposely been omitted for the sake of brevity, and our opinions and conclusions are based on our own results and a survey of the literature. The surgeon or urologist and the radiologist must cooperate in order to obtain the best results, and, if each case is studied thoroughly and treated as an individual entity with due regard to certain important pathologic, biologic, and technical factors, the good results that may be obtained will prove highly gratifying to all concerned.

CONTRA-INDICATIONS FOR LAPAROTOMY.*

By WILLIAM J. MALLORY, A. M., M. D., F. A. C. P.,
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Is this a case for the surgeon?

Surgical treatment of acute conditions has saved so many lives, and a timely operation has restored to health so many chronic invalids that in any patient presenting symptoms

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of acute or recurrent abdominal disease, this question sooner or later arises.

Upon the prompt and correct answer often depends not only important financial considerations, but also the health and even the life of the patient. But despite advancement in medical knowledge, improvement in methods of diagnosis and perfection of surgical technique, we still have occasion, in some instances, to deplore the fatal omission of a necessary operation, and the employment of futile surgical procedure in other instances when operation is not needed.

For example, deaths from acute perforated appendix still occur. In a series of operations for acute appendicitis recently reviewed, it was found that 18 per cent had perforated, and that the mortality in this group of perforated cases was 18 per cent, whereas the mortality in the non-perforated group was nil. Another observer found that abdominal operations were performed in 20 per cent of cases in which symptoms were due to renal stone.[1] Obviously practice is not abreast of available medical knowledge in the diagnosis of abdominal and related diseases.

Many circumstances contribute to produce this state of affairs. For example, *symptoms* of acute surgical disease of the abdomen are well known, and usually lead to the formation of a correct opinion, while the necessity for prompt action, and the serious consequences of delay or omission, have been so often emphasized by sad experience that surgical procedure is sometimes unnecessarily hurried.[2]

On the other hand, a chronic syndrome which does not yield to medical measures is sometimes passed on to the surgeon "as a last resort" or for "exploration" for no better reason than that other remedies have failed to produce a satisfactory result.

Mr. H. J. B., a railway foreman, 64 years of age, suffered an attack of abdominal pain, distention, and vomiting. These obstructive symptoms subsided after an evacuation of the bowels, and a thorough survey revealed no evidences of organic disease. Under hygienic management the bowels became regular without laxatives, and the patient gained some weight. There remained, however, a considerable amount of mental depression, and he was particularly anxious concerning cancer. A few months after he was last seen the information was received that an exploratory laparatomy had been performed, and only a slight hepatitis was found. A few weeks later, following the operation, the patient developed an involutional psychosis for which he was hospitalized in a Government institution.

The consequences of such illogical procedure is also manifest in the number of patients with single or multiple abdominal scars who are still seeking relief from abdominal distress.

This situation naturally suggests three methods of possible improvement:

First, a better acquaintance with the rationale of diagnosis (medical logic). This may be acquired by a complete and diligent restudy of the subject.[3] Such a study is essential, not only to beginners but to every one who accepts the responsibility of giving diagnostic advice, for the value of such a review is progressively inhanced in proportion to clinical experience.

Second, even in cases showing evidence of acute surgical disease of the abdomen,[4] adequate study can be made without dangerously delaying operation. Such study should include—

(a) History of *previous* illnesses or operations as well as present illness.

(b) A systematic physical examination, including organs and systems *not* suspected of disease. The heart, lungs, nervous system, eyes, ears, nose, throat, pelvic organs, bladder, and prostate should receive such investigation as any general practitioner can give. Positive findings in one of these fields may require consultation and special examination, and may lead to the diagnosis of a non-surgical disease. Even if surgical operation is decided upon, certain laboratory tests should not be omitted, and, if there is the slightest doubt, laboratory studies should be extended to include such tests as may be made without causing dangerous delay if an operation is assumed to be necessary. Considered in the order of the simplicity and importance, the following examination should be made—

Urine: Presence of blood, pus, or sugar if found in the usual examination of the urine obviously demand further investigation before operation.

Blood: A high leucocyte count, above 18,000, or a peculiar differential count may point emphatically to non-surgical disease. Blood sugar determinations may show that abdominal pain, nausea, and vomiting are due to acidosis, either without or with abdominal surgical dis-

ease.[5] A scybalous stool with mucus may indicate an acute attack of mucous colitis.[6]

(c) Roentgenological examination of the chest made at the bedside may reveal a central pneumonia without physical signs, or some other chest pathology, thus removing the patient from surgical status.

Third, during the study of a case presenting symptoms of acute intra-abdominal conditions, it is important to know and bear in mind that there are many non-surgical conditions which may masquerade as the so-called "acute surgical abdomen." Operation for these conditions is not only an error, humilating to the physician, but it may jeopardize the life of the patient. If we simply call to mind some of these conditions when attempting to make a diagnosis, some such mistakes will be avoided. It may be worth while to catalogue some of such conditions.

INTRA-THORACIC CONDITIONS

1. Pneumonia
2. Acute pericarditis
3. Mediastinal disease
4. Coronary occlusion
5. Angina pectoris
6. Ruptured heart, first stage
7. Pneumothorax, acute spontaneous
8. Aneurysm with slow leakage.

INTRA-ABDOMINAL CONDITIONS

1. Pyelitis
2. Crises of sickle cell anemia
3. Nephrolithiasis
4. Dietl's crisis
5. Intestinal parasites
6. Mucous colitis

MISCELLANEOUS

1. Meningitis
2. Encephalitis, early
3. Crises (tabetic)
4. Typhoid
5. Typhus fever
6. Referred pain of spinal origin
7. Tonsillitis
8. Herpes zoster
9. Malarial fever with leukocytosis
10. Lead colic

The above mentioned conditions in an atypical form have presented themselves in an embarrassing manner in my own personal experience, and there are many reports in the literature illustrating the real necessity for prompt differential diagnosis of such conditions, but since they are rare we are apt to forget that they present such a diagnostic problem.

REFERENCES

1. Cecil: Abdominal Pain in Disease of the Kidney and Ureter. *J. A. M. A.*, pp. 75 1239, 1920.
2. Mallory, William J.: Aneurysm of the Thoracic Aorta, as a Cause of Acute Abdominal Symptoms. *J. A. M. A.*, Vol. 80, pp. 1356-1359, May 12, 1923.
3. Barker, Lewellys F.: The Rationale of Clinical Diagnosis. *Oxford Medicine.* Vol. I., p. 619.
4. Cope, Zachary: The Early Diagnosis of the Acute Abdomen. Oxford, Medical Publications.
5. Smith, James H.: Intra-Abdominal Inflammation in Relation to Diabetic Acidosis with Leucocytosis. *J. A. M. A.*, pp. 92-308, January 26, 1929.
6. Barker, Lewellys F.: On the Management of the Spastic Colon and Mucous Colopathy, Especially in Hypervagotonic Persons. *J. A. M. A.*, p. 606, November, 1929.

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PRACTICAL POINTS IN THE ROENTGENOLOGIC DIAGNOSIS OF PEPTIC ULCER.*

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As early as 1906, John C. Hemmeter tried to obtain aid from the roentgen ray in the diagnosis of gastric ulcer by administering a small quantity of bismuth subnitrate in the expectation that the drug would adhere to the crater and thus reveal its site. In one or two cases the effort seemed fairly successful. In 1909, Reiche, by filling the stomach with a suspension of a bismuth salt was able definitely to depict the crater of a large ulcer on the lesser curvature. Five years later, Lewis Gregory Cole demonstrated the niches and bulbar deformities produced by duodenal ulcers. In following years both technic and interpretation improved vastly, and today the universal employment of the roentgen ray for the diagnosis of peptic ulcer testifies to the efficiency of the method.

Contrary to former belief, gastric ulcers are not common. For example, in the last year at The Mayo Clinic they were found in scarcely more than 1 per cent of patients subjected to roentgenologic examination of the stomach and they constituted less than 3.5 per cent of all gastric and duodenal lesions revealed by the roentgen ray.

With respect to their morbid anatomy, three varieties of gastric ulcer are recognized: (1) erosions so shallow that the loss of substance is hardly appreciable, (2) penetrating ulcers which have produced a definite excavation of variable depth in the gastric wall, and (3) perforated ulcers, which may be sealed at the serosa or may burrow into an adjacent organ or tissue and thus form a pocket outside the

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stomach. The favorite seat of all varieties is on the posterior wall near, sometimes immediately on, the lesser curvature, in the vicinity of the angular incisura, which is the most dependent portion of the lesser curvature. However, they are frequently situated on the posterior wall distant from the curvature, or in the antral segment of the stomach, and exceptionally they may occur on the anterior wall, the greater curvature or in any portion of the stomach, but I have never observed an ulcer above the plane of the esophageal opening or noted the report of such a case.

The fundamental diagnostic sign of gastric ulcer, elicited by roentgenologic examination with the opaque meal, is the visualized ulcer-crater, the niche, or its exaggerated form, the accessory pocket. In the majority of cases the niche appears as a bud-like prominence on the margin of the gastric silhouette, often on the lesser curvature, as depicted in the mesial view. However, corresponding to the situation of the ulcer, it is frequently necessary to inspect the gastric shadow in the oblique or lateral view to discover a marginal niche. In many cases, especially when the ulcer is remote from the curvature, no marginal niche can be discovered, but on approximating the gastric walls by palpatory pressure the crater is visible as a rounded dense fleck, or niche *en face*, within the fainter shadow of the stomach. The accessory pocket, representing the cavity of an ulcer which has perforated the gastric wall and invaded neighboring tissues, is seen as a more or less rounded barium shadow outside but near the stomach, usually on the lesser curvature side. The barium in the accessory pocket may show an upper fluid level and be capped by a bubble of air. Most often the pocket is in the liver, but it may be in the pancreas, spleen or anterior abdominal wall. Accessory pockets are extremely rare.

Certain secondary signs are of value, either in stimulating the examiner to search for an ulcer or in corroborating the diagnosis. Often the rugae about an ulcer are accentuated and converge toward the crater. Almost invariably when gastric ulcer exists the stomach is of the hook-form, and in many instances the pyloric segment is curled toward the median line. Occasionally gastric ulcer gives rise to hour-glass deformity of the stomach either by scar-contraction or more rarely by spastic constriction of the circular muscles in the plane of the ulcer. Spasm of the gastric antrum, producing irregularity or even obliteration of the barium shadow in this segment, is a common accompaniment of gastric ulcer wherever situated. It is most commonly seen at a distance of 2 to 4 cm. proximal to the pylorus. Retention from the six-hour meal occurs frequently, but the stomach is not often dilated, and apparently the retention is usually due to spasticity of the pylorus. Ordinarily peristalsis is fairly active, but the waves may skip the ulcer-bearing area. Tenderness to pressure over the niche is an item of confirmation.

In making the diagnosis, certain simulants of ulcer require exclusion. The projection on the lesser curvature between two peristaltic waves resembles a marginal niche, but, of course, advances as the waves progress toward the pylorus and will be deceptive only when a diagnosis is attempted on one or two films alone. A bit of barium in the bowel adjacent to the stomach may imitate a niche, but it shifts its position when the angle of view is altered or the stomach is manipulated. The secondary signs mentioned accompany various diseases and functional abnormalities of the stomach, and only the demonstration of a niche which is constant in situation and appearance is a valid basis for exact diagnosis.

Distinction between simple and malignant ulcers frequently occasions difficulty. A perforated ulcer with an accessory pocket is seldom carcinomatous. Ulcers with craters exceeding 3 cm. in diameter are usually, but not invariably, malignant. Smaller ulcers are benign, as a rule, but occasionally they prove to be malignant. Obliteration of rugae, complete absence of spastic manifestations, irregular shape of the niche and lack of tenderness are suggestive of malignancy even though the ulcer is small. An ulcer whose crater is encircled by a prominent or overhanging ridge is almost certainly an ulcerating cancer. Prepyloric ulcer is especially hard to distinguish from cancer or other lesions; often its niche cannot be demonstrated and the distortion of the antrum is virtually identical with that produced by prepyloric cancer at an early stage, syphilis or hypertrophy of pyloric muscle.

Rather frequently gastric and duodenal ulcer are associated. Last year at The Mayo Clinic 22 per cent of the gastric ulcers found at operation were accompanied by duodenal ulcer, although heretofore this percentage has been con-

siderably lower. It is obvious that when either lesion is discovered the examiner should investigate as to the presence of the other.

I would point out that as gastric ulcers are relatively rare, the roentgenologist should not be too ready to make this diagnosis, and should confine this interpretation to cases in which a definite niche can be discerned. Because antral ulcers are hard to identify as such, and because he cannot always distinguish accurately between benign and malignant ulcers, he will have a rather high ratio of errors in endeavoring to make these distinctions. Nevertheless, almost without exception, when an ulcer exists, its manifestations are so pronounced that he can at least definitely affirm that a lesion is present, and this fact, in conjunction with the clinical data, will usually lead to a correct specific diagnosis.

Although by no means a novel theme, duodenal ulcer holds a commanding and practical interest. It is the most common organic disease of the alimentary canal which can be revealed by the roentgen ray, and its roentgenologic diagnosis can be made with greater accuracy than that of any other common lesion of the digestive tract. At The Mayo Clinic during 1930 the ratio of duodenal ulcers to gastric cancers was 5 to 1, and to gastric ulcers was 11 to 1. Indeed, the total number of duodenal ulcers found with the roentgen ray exceeded the aggregate of all other major lesions of the alimentary tube thus discovered, and the ratio of errors in the diagnosis of duodenal ulcer was lower than in the diagnosis of gastric cancer or gastric ulcer. To obtain a satisfactory degree of accuracy in this diagnosis I feel strongly that three factors are essential, namely, roentgenoscopic examination, a simple aqueous suspension of barium, and palpatory manipulation in order to exhibit the duodenum adequately.

For many years indirect and secondary phenomena, such as gastric hypertonus, hyperperistalsis, and hypermotility or obstruction, played an important rôle in the diagnosis. Although these signs may have a certain corroborative value, or direct the examiner's attention to ulcer, it is now well known that the basic sign is the abnormality of the duodenal contour and topography produced directly by the ulcer.

The normal duodenal bulb, as seen with the roentgen ray, has a standard appearance. It is symmetric, smooth of contour, and has no mucosal pits or irregularities. Persistent and unchanging deformity of the bulb is so nearly pathognomonic of ulcer that it is unsafe to attribute bulbar distortion to any other cause. It is true that periduodenal adhesions and duodenal cancer may also produce constant bulbar deformity, but cancer of the duodenum is so rare that it is a pathologic curiosity, and the frequency of deformity by adhesions has been greatly overrated. Adhesions are not uncommon, but, even when abundant and dense, they seldom distort the duodenal contour. An incompletely filled bulb is also irregular in shape, but the distortion varies in aspect and will not be deceptive unless a diagnosis is attempted on one or two films alone.

In perhaps three-fourths of all cases of ulcer, bulbar deformity can be demonstrated by ordinary measures and is so obvious that it can scarcely elude observation. Typical of such deformities are the clover-leaf deformity, the pine-tree appearance, and the serrated, asymmetric bulb, all of which have been made familiar by their common use as illustrations in papers on this subject.

A considerable minority of ulcers, not less than a fourth of the total, are in some degree difficult to discover, and can be demonstrated only by suitable technical maneuvers and close observation. This difficult group includes ulcers of patients who are hard to examine, ulcers accompanied by diffuse duodenitis, those which produce only slight changes in the bulbar outline, those which cause marked stenosis, ulcers near the apex of the bulb or beyond it, and those which are visible only as a dense fleck within an undeformed bulbar shadow.

Ordinarily the duodenal bulb will fill spontaneously with the aqueous suspension of barium and afford satisfactory roentgenoscopic study, but sometimes the pylorus fails to open widely enough to permit a sufficient outflow. In such cases the examiner, by grasping the abdominal wall with his right thumb below the lower border of the antrum and his fingers above its upper border, can usually force an adequate amount of barium into the bulb. Sometimes the patient is frightened and tenses his abdominal wall so rigidly that manipulation of the stomach is impossible. As a rule he can be made to relax by instructing him to drop his shoulders forward and to breathe deeply. If the patient has a broad habitus

with a transversely lying steer-horn stomach the bulb often turns directly backward from the pylorus and is concealed by the antrum in the anterior view. In such instances, by turning the patient to his left, an angle will be found at which the bulb can be seen distinctly.

In cases of ulcer associated with diffuse duodenitis, the duodenum is irritable and empties so rapidly that it is hard to secure complete filling of the bulb. Usually the flow can be retarded by manual pressure over the duodeno-jejunal juncture.

Not rarely the deformity produced by an ulcer is so minute that it may escape observation. Although the small deformities may occur in any part of the bulb, they are more common along the basal border, and this portion of the bulbar outline should always be carefully inspected.

An ulcer producing marked obstruction near the pylorus is often hard to distinguish from a prepyloric lesion, because the bulb is not likely to be depicted. However, in obstructive duodenal ulcer the gastric antrum usually terminates smoothly and roundly, while in obstructive prepyloric lesions the antral termination is likely to be conical and irregular.

An ulcer at the bulbar apex often produces what seems to be a short bulb of normal contour. On closer observation it may be seen that the lumen beyond the apparent peak is greatly narrowed and the second portion of the duodenum descends steeply from it.

Although ulcers in the second and third portions of the duodenum are uncommon, these segments should always be inspected. An ulcer in this situation produces an irregular but marked narrowing of the duodenal lumen over a distance of 1 to 3 cm. The narrowing is localized, persistent in site and configuration, and thus differs from the normal lumen which varies in width throughout in ratio to the volume of flow.

Most interesting and most important among the ulcers which may be overlooked are those which are demonstrable only as a niche *en face*, or fleck. At the Clinic during 1930 the diagnosis was based on the fleck alone in about 15 per cent of the cases of duodenal ulcer. Whenever the duodenal contour appears to be normal the examiner should never assume that duodenal ulcer can be excluded until he has sought for and not found evidence of a fleck. Especially is this true in cases in which there is a large flaccid bulb. To elicit the fleck it is necessary to approximate the anterior and posterior walls of the bulb by pressure with the palmar surfaces of the fingers on the overlying abdominal wall. By this manipulation the barium content of the duodenum is so thinned out as to cast a faint shadow, and if a niche is present it will appear as a small, more or less rounded, dense fleck within the bulbar area. Barium penned up in the pyloric canal by manipulation may resemble a fleck but it changes in size and configuration. A true fleck niche maintains the same size, form and situation in successive views. The fleck is not only a thoroughly reliable sign of ulcer, but this evidence of a definite crater indicates that the ulcer is active.

In the foregoing, emphasis has been laid on the phenomena by which peptic ulcer may be identified and the simple measures by which the less pronounced signs can be revealed. It is implied with equal stress, however, that all roentgenologic abnormalities, whether gross or minute, must be interpreted with due caution, and that valid signs must always be distinguished from the transitory, variable and meaningless eccentricities which are so often encountered in the roentgenologic examination of the stomach and duodenum.

BIBLIOGRAPHY

1. Cole, L G.: The Diagnosis of Post-Pyloric (Duodenal) Ulcer by Means of Serial Radiography. *Lancet.* 1:1239-1244 (May 2), 1914.
2. Hemmeter, J. C.: Neue Methoden zur Diagnose des Magengeschwürs. *Arch. f. Verdauungskr,* 12:357-363, 1906.
3. Reiche, F.: Zur Diagnose des Ulcus ventriculi im Röntgenbild. *Fortschr. a. d. Geb. d. Röntgenstrahlen.* 14:171-173, 1909.

URETERAL STONES—A REVIEW OF THREE HUNDRED CASES.

By WM. M. COPPRIDGE, M. D., F. A. C. S., Durham, N. C.

This series of cases comprises those that we have treated during the nine year period from January, 1922, to January, 1931. I do not have in mind the presentation of anything more than an analysis of the cases and the making of some remarks on the subject in general.

Rapid advances have been made in the past fifteen years in the diagnosis and treatment of urinary calculi, but little has been added to our knowledge of the cause of the disease. We recognize a racial tendency to form stones; we know that stasis and infection play a role,

particularly in the growth of calculi, but just what factors of physics and chemistry combine to form the nucleus of stones are poorly understood. Congenital malformations, by producing abnormal conditions of drainage, predispose to stone. Administration of drugs that produce abnormal alkalinity of the urine, when given over a long period, tend to cause the formation of phosphatic calculi. Six cases in this series appear to have formed stones while taking alkalies for duodenal ulcer. Prolonged immobilization in bed or in plaster casts have been observed to predispose to calculus formation. In two of our cases we believe this was the etiological factor. Each of the patients had been in bed in casts for fractured pelves for many weeks. There was no appreciable damage to the urinary tract at the time of injury and no history of any previous urinary disease or symptoms. In each case multiple phosphatic calculi were formed. Observation of these cases led us to the conclusion that in such patients it might be well to keep this possibility in mind and attempt to combat it by the use of forced fluids and the administration of drugs which tend to acidify the urine.

The Negro seems relatively immune to stone. Only three of this series were of this race. I do not recall ever having treated a case of renal calculus in a Negro.

Age, Sex and Side Affected

Ureteral stone is seldom seen in children. It seems that passage of the stone down the ureter is accomplished much more promptly and with less difficulty than in adults. Bokay[1] collected 1,836 cases of calculi in children in which 1,819 were in the bladder and only nine in the kidney. Bumpus[2] and Scholl, reporting 880 cases of ureteral stone, found five under the age of ten, and three in patients over seventy. Five hundred and thirteen of their cases were between the ages of thirty and fifty. Hinman reports operating on an eleven months old infant for stone, at which time he removed the kidney and ureter. There was only one child in our series—aged four—and this the only case under fifteen. The oldest was sixty-nine. The average age was thirty-four.

Men are more susceptible to stone in all portions of the urinary tract. Jeanbrau gives the proportion as 61 per cent males and 39 per cent females. Bumpus and Scholl give their percentage as 68 per cent males and 32 per cent females. Our series showed 69 per cent males and 31 per cent females. Impaction of stone in the lower ureter is more common in women and is due to the frequent obstructions to the ureter in the broad ligament area and also to the obstruction often caused by the uterine artery as it crosses the ureter. All of the low impacted calculi in this series were in women and, accordingly, all of the low ureterolithotomies were in this sex. This is a rather fortunate occurrence, since low operations on the ureter in men are much more difficult than in women because of the smaller capacity of the true pelvis in men.

There seems to be little choice of sides in the occurrence of ureteral stones. Most series report them as equal. In our series, 169 were on the left side and 131 were on the right. Bilateral ureteral calculi occurred in four of our cases.

Diagnosis

The first X-ray for renal calculus was made by McIntyre in 1894. He made a twelve minute exposure and had the diagnosis confirmed at operation. Brown, in 1893, was the first to catheterize the male ureter. So only one year separated the two achievements upon which modern urology has developed, and this was thirty-eight years ago. These two diagnostic agencies have advanced together until today the diagnosis of ureteral stone is relatively easy. The small percentage of calculi not casting shadows still gives some trouble. They are usually uric acid stones, and, luckily, they most often pass naturally. Geraghty,[3] in 1915, failed to find stones in 22.4 per cent of sixty-seven patients proven to have them. Braasch[4] and Moore, in the same year, placed their failures at 11 per cent. Israel, in 1925, stated that in Germany failures were between 1 and 4 per cent. Of course, the number of stones not found will depend largely on the preparation of the patient for the X-ray and the care with which the work is done. There will be fewer stones shown when only one plate including the whole tract is made. I have repeatedly observed that small stones in the lower ureter that do not show in the one large plate will later be shown up when focus is made directly over them. It would seem best, then, to routinely make two plates—the first to include the upper ureters and kidneys, the second the lower ureters, bladder and prostate. It is probable that in this country today, where

the work is done under the best of conditions, less than 2 per cent of ureteral calculi fail to show.

Calcified lymph nodes lying along the ureter often cause confusion. When these nodes are in the mesentery they usually change position often and repeated plates will show them in different positions. When they are located along the lower ureter the waxed catheter is often used. We have more often employed the method suggested by Bransford Lewis—that of first making a plate with ureteral catheter in place and then, after removing the catheter, making the second plate with a more rigid instrument in the ureter. This will tend to straighten out the curves of the ureter. If the shadow follows the ureter it is stone. Kretschmer's method of making X-rays at various angles is valuable if the node is not too close to the ureter. In cases not suited to cystoscopy and ureteral catheterization, uroselectan may be used to advantage.

Results of Ureteral Calculi

When completely blocking the ureter, a stone may have the same effect as ligation, that is, distention of the renal pelvis with ultimate death of the kidney. This may occur in a few days. Quinby[5] has shown that if the obstruction be complete, the ureter dilates to a point consistent with an intrarenal pressure of 40-60 mm. Hg. below the systolic blood pressure, at which point secretion of urine stops and the organ gradually atrophies unless the pressure is relieved. I will show slides of one case in which a small ureteral stone has caused the death of the kidney. Fortunately such occurrences are rare because the obstruction is seldom complete for any great length of time. Knowing as we do that abnormal kidneys are more likely to form stones than normal ones, it would seem advisable to carry out at least a uroselectan study on all cases of ureteral colic, whether the stone is passed spontaneously or not.

Some degree of urinary obstruction is always produced by ureteral stones, and, whether complete or not, may cause anuria of the affected side. When infection is present, the added danger of pyelonephritis develops, which in many cases results in pyonephrosis.

The possibility of bilateral calculi must always be considered even though the symptoms are confined to one side. For this reason an X-ray study should be made of each case. If bilateral calculi are found, careful observation is necessary because of the possibility of anuria developing. When calculus anuria develops, immediate action is necessary. This condition constitutes one of the few urological emergencies.

Ureteral stones are responsible for a very large percentage of kidneys requiring nephrectomy. The stones may remain silent for years, but the destructive process goes on. The kidney shows remarkable ability to repair itself when the obstruction is removed, provided the damage has not gone too far. In order to protect the kidney, then, it is necessary to relieve these obstructions as early as possible.

Treatment

Just what percentage of stones pass spontaneously is, of course, unknown. Once a stone is found lodged in the ureter and bilateral calculi are excluded, the patient may be observed for a few days on palliative treatment. After this time, if it shows no tendency to move, some form of treatment should be instituted, directed towards facilitating its passage. This is especially true if infection exists. During the period of observation studies of the blood and urine are made in order to establish facts regarding the functional capacity of the kidneys. As stated above, uroselectan studies may disclose interesting and valuable data concerning the kidneys.

Unless the stone is very large or very rough, and unless severe infection is present, removal by cystoscopic manipulation should be tried. This method of ureteral dilatation and the injection of oil was popularized by Dr. A. J. Crowell[6] and credit is due him for more or less standardizing the treatment. Three objectives are reached when a catheter is passed above the stone,—drainage is secured, pain relieved and dilatation of the ureter at the site of the stone together with a relaxation of muscular spasm of the ureter. A very large percentage of calculi can be made to pass by this method alone; 191 out of 300 cases in our series are known to have passed their stone after one or more treatments. Thirty-eight additional cases who disappeared during treatment—probably because of passage of the stone—might be added to the above number. The method aided in the removal of twenty-five additional stones which also required the use of operative cystoscopy in addition to the usual treatment. This brings the total to 254

cases in which the passage of stone was aided by cystoscopic manipulation.

Several mechanical removers have been produced. Bransford Lewis, Council, Livermore and several others have devised instruments for ensnaring the stone and removing it. Robert McKay has recently brought out a remover in which several threads are arranged on a filiform for the purpose of passing the stone and then entangling it in the threads on removal. I have employed it several times and have been successful in removing one stone with it. In general, I am opposed to the use of the mechanical removers, especially the metal ones. In most of them it is impossible to release the stone when it is once caught. They should be used only after thorough dilatation of the lower ureter by the Crowell method.

Operative cystoscopy is employed in cases of stones embedded in the ureteral meatus. Meatotomy with scissors or a high frequency electrode may be done and the stone released. Sixteen cases of our series were handled with this procedure.

When is open operation for ureteral stone indicated? In general, the following points have guided us: All other factors being favorable to operation, we have leaned toward operation—when the stone is of large size, when removal, if accomplished at all, would require too many treatments; stones of smaller size if much infection be present; those that cannot be passed by catheters after repeated efforts; stones of moderate size located in the upper or mid-ureter that show little response to treatment; all cases of bilateral stones that cannot be dislodged into the pelvis or adequately drained with catheters. The functional capacity of each kidney must be considered and proper methods directed towards relief of the best kidney first.

Ureterolithotomy is not an operation of much risk. We have had no operative mortality from it. It can usually be done fairly quickly and requires only about ten days postoperative care. In general we have favored operation in cases which apparently would require too much instrumentation and in cases that we think instrumentation might result in too much infection. Sterile cases may become infected during ureteral manipulation, and the longer the stone remains in the tract the greater the danger of complications.

We classed thirty-one of our cases as operative. Two refused operation and three of the operations were pyelotomies for drainage. This leaves twenty-eight cases which required operation for removal of the stone, or 9.3 per cent of the series. Caulk[7] gives the percentage of required ureterotomies as 7 per cent. The Crowell Clinic series, as reported by Squires,[8] shows a total of 606 cases in which operation was advised or done in 9.24 per cent. This places the operative percentage in the Crowell Clinic series and ours at approximately the same, while both were higher than Caulk's estimate.

Analysis of Treatment of 300 Cases

Stones passed while under observation without treatment	8
Stones passed after one or more treatments	191
Cases requiring ureteral meatotomy or use of forceps	16
Stones removed by mechanical stone remover	9
Pushed back into pelvis and left	7
Disappeared under treatment	38
Operated for stone or drainage	29
Operation advised and declined	2
Total	300

In these operative calculi uroselectan finds one of its fields of greatest usefulness. In this series we were able to employ it only a few times, since it was available for only about six months of the period.

Analysis of Operated Cases

High Ureterolithotomies	8	Right	4
		Left	4
Mid-Ureterolithotomies	11	Right	7
		Left	4
Low Ureterolithotomies	6	Right	3
		Left	3
Suprapubic Cystotomies	1		
Total	26		
Pyelotomies for drainage	3		
Total operations	29		

Mortality

In the 300 cases there were four deaths. One of these occurred two days after a ureteral dilatation and was a cardiac death in a woman fifty-two years of age. The cause of death was myocarditis. Another was a man with bilateral stones with advanced cancer of the bladder. Death was caused by carcinoma metastasis. This case was only given palliative treatment. This leaves a total of two deaths that we have classified as "kidney deaths" or those due directly to the stone. Both were women. One was a long standing case of bilateral impacted stones of the lower

ureter. Two stones were removed from the right ureter, but death followed two months later or two weeks after operation for removal of the stone in the left ureter. Death was due to renal insufficiency caused by bilateral advanced renal infection. The other death was due to acute, severe infection in a woman fifty-two years of age, caused by impaction of a stone in the upper left ureter. The patient had been ill ten days before admission to the hospital in a very toxic condition. Emergency nephrotomy was done. Diffuse pyelonephritis with multiple staphylococcus abscesses was found. Death occurred a week later from sepsis. Both of these cases occurred five years ago before we began the use of spinal anesthesia and the employment of intravenous glucose to the extent that we do at present. It is probable that refinements in diagnosis, anesthesia and continuous intravenous glucose medication may have saved these two cases.

Accidents From Cystoscopic Manipulation

There were three occurrences in this series that might be classed as accidents. Only one was serious. In this case the left ureter was punctured by a catheter carrying a stylet. I have very seldom employed stylets in ureteral catheters and have not seen fit to do so at all since this experience. Infection in the tissues around the ureter occurred, the patient was very ill for two weeks but recovered without any operative interference and has remained perfectly well. This is the only case of its kind I have ever encountered, but Hunner[9] reports twelve such accidents of his own and nine by his assistants.

The second case was that in which a number six catheter was passed by a stone in the lower right ureter. There was a marked hydroureter above the stone and the catheter, being more flimsy than is usually the case, curled up in the ureter so that when an effort was made to remove it, it tied into a knot. It was most difficult to remove, but after remaining in place thirty-six hours and with the use of more traction than I desired to use, it finally slipped by the stone. There was considerable hematuria and pain and some fever for a few days but otherwise there were no complications. The stone passed several days later.

The other case was that in which a stone in the lower left ureter was grasped with a mechanical stone remover. It was a moderate sized stone and the ureter had been dilated several times previously but three days were required before the instrument could be withdrawn. The patient weighed 280 pounds and operative removal would have been difficult. Strong, steady traction finally caused one blade of the instrument to break (luckily proximal to the patient) and the instrument was entirely removed. The stone passed ten days later.

Hysterical Lithiasis

Mention might be made of the type of case referred to by Braasch[10] as "hysterical lithiasis." By this he refers to those cases of malingering in which the patient feigns the passage of stones. He reports nine cases that have occurred at the Mayo Clinic, eight of whom were women. Two of the patients had introduced calculi into the bladder. I have treated two women who presented stones that they claimed to have passed, which, on examination, proved to be false. As is usually the case, they gave the history of repeatedly passing stones. One of the women brought with her eight or ten small gravel, some of which looked like bits of concrete, while others resembled small pebbles. When confronted with the statement that she could not have passed the material, she became angry and disappeared. The second case was more difficult to handle. She was under observation for eighteen months—being seen at intervals of several months. Each time she was referred by her family physician because of kidney colic and the passage of stones. Complete urological examination was repeatedly negative. She was asked to bring in the next stone she passed. In a few days she returned with four pebbles. Privately her husband was assurred that she could not have passed the stones but he could not be convinced because he claimed to have heard the stones strike the vessel when they were passed. The woman had secreted two stones between the labia and allowed them to fall at the opportune time. This woman was finally operated upon and nephrectomy done by another surgeon, which goes to show to what extent these malingerers will carry their fraud in an effort to impress those about them. The last I heard of this case was to the effect that she was having kidney colic on the other side.

It finally came to light that the motive in

each of these cases was the same. Both lived in the country and wished to move to town. Their husbands were opposed to moving. The drinking water contained limestone and the wives claimed that the water was causing them to form stones. In this way they tried to impress upon their husbands the necessity for moving.

Summary

Three hundred cases of ureteral stones are reported. Analysis of the treatment and results are given. Three cases of accidents occurring during cystoscopic manipulation are reported and two cases of hysterical lithiasis mentioned.

References

1. Bokay, J. V.: *Zeitschrift fur Kenderheilkunde*, 1912.
2. Bumpus and Scholl: Ureteral Stones, Surgical Clinics of North America, Volume V, 1925, No. 3, p. 813.
3. Geraghty and Hinman: Ureteral Calculus, *Surgery, Gynecology and Obstetrics*, May, 1915, pp. 515-522.
4. Braasch and Moore: Stones in the Ureter, *J. A. M. A.*, LXV, 1915, No 15, p. 1234.
5. Quinby: Physiology and Pathology of the Ureter, *Journal Urology*, Vol. VII, p. 259.
6. Crowell, A. J.: The Removal of Stones by Cystoscopic Manipulation, *Journal Urology*, September, 1921, Vol. VI, p. 243-265.
7. Caulk, J. R.: The Significance of the Ureter in Surgery, *Surgery, Gynecology and Obstetrics*, August, 1929, p. 228.
8. Squires, Claude B.: Disposition of Ureteral Calculi at the Crowell Clinic from 1915 to March 31, 1930, *Journal Urology*, Vol. 24, p. 461.
9. Hunner, Guy L.: Dean Lewis Practice of Surgery, Volume VIII.
10. Braasch: Unusual Types of Urinary Lithiasis, *Journal Urology*, Vol. 23, January, 1930, p. 1.

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EMOTIONS AND CHARACTER AS RELATED TO ART IN MEDICINE.

By FRED M. HORSLEY, M. D., Arrington, Va.

Though the practice of medicine has risen from a past art composed of many fallacies to a science of great accomplishment, yet, in the application of modern medical knowledge, art, classified by the light of research, is still needed.

The consideration of life as a whole, its physical, mental and spiritual make-up, is necessary in the application of treatment, as the inanimate facts of science are applied to highly developed living organisms, different in individuality, variously receptive to influence, and complex in reactions.

Though much has been discovered about human life in scientific studies, there are great unknown fields, such as knowledge of mental and nerve functions and influences.

The emotions, such as fear, hate, joy, greatly affect human life. Elements of character embodied in bravery, faith, temperance, love of truth, law and order, markedly influence our being, and the opposite has its bad effect; so the emotional and character have their bearing upon treatment.

It is known that fear, hate and anger change internal secretions, altering physiology, and such alterations, if continued over a period of time, cause functional trouble or disease. Diseased conditions arise from injured or altered tissues and infections, acting as primary or secondary causes. Perverted function is often the incipiency of disease, and most frequently the general practitioner has to deal with functional troubles that may cause the same suffering as diseased conditions which, unless relieved, will in some cases take on the form of pathology. Very varied, numerous and intricate are the influences that affect health. Emotion, the mental attitude and the character of one's make-up, as well as the character of his conduct and thought, are some of the sources from which these influences spring. That the presence of a doctor in whom a patient has confidence often brings relief to one's suffering from functional trouble, or even helps him though afflicted with real disease, is probably due to a psychic influence bringing relief through a readjusting of nervous influences coming from the mind.

That physicians of the past who have had considerable reputation for their accomplishments must have gained these reputations in part, at least, by confidence inspired in the patients, for forty or fifty years ago there was little known of real curative value as compared with the present.

We must not lose sight of the fact, however, that the character, ability and personal qualities that inspired confidence in the patient, and brought relief, was a big asset and a means of relief of real value, standing with many of the modern methods of surgery and therapy that are more tangible as curative means.

We know that the dread of a surgical operation not infrequently leads to bad post-operative results, and modern surgery realizes that it is not only a perfect technique and biological

principles carried out, but the state of mind of the patient that has to be considered and corrected, if need be, to get results.

The thyroid and perhaps other glands of internal secretion are often affected during pregnancy. How much looking forward to the suffering and danger of birth has to do with this and with some toxemias of pregnancy is not known; but that such toxemias are often accompanied by high blood pressure is suggestive, as raised blood pressure may ensue from tension brought about by fear and dread of a condition.

Indigestion and metabolic troubles frequently arise from a disturbed mind and from lack of relaxation sufficient for the exchanges of the body, and certain emotions may alter these functions materially. The worried or emotional mother may have a colicky, underdeveloped baby, caused by the alterations of her milk, brought about by such a state of mind.

The infants average life has been lengthened by administering proper food, care, etc., but tension arising from rapid living of the present that brings worry and care does not affect the infant, so the question of extending the life of an adult is involved by the above problems that do not apply to the child. It is in the field of emotion and manner of living that we will have to search for some of these causes.

Fear in its various forms is a curse to many a life. The more ignorant and superstitious people are the more besieged by this curse. Civilization and education in a degree eliminate the harmful effects of emotions, but in some ways only change its form. Fear of failure, competition and influences of individuals or organizations are some frequent modern ways this is shown. Worry, so common, comes from fear or lack of confidence. Often fear haunts the demented, indicating that either this may have been the cause of mental derangement or perhaps aided in bringing it about.

There were many young men cast aside as physically unfit by the draft boards in our last war, though many of these men could have been physically fit if they had adopted the proper course of living. "Honor thy father and thy mother that thy days may be long" is a command that has a far-reaching meaning in the development of youth for fit citizenship as well as long life. The child that is taught to obey, honor and respect his parents, not only more likely makes a good citizen, but has inground into him the principles of self-control, obedience and service for others that makes him respect the rights of his fellowman, and the length of days added to his span of life comes from a training that results in a better correlating the forces and energies within to external influences.

Character, controlled and operated by the correct ideas of truth, solves many a problem of health. It is often where one leaves such control that harm comes to body or mind. Facing facts and rightly adjusting one's course to the same is something that many shrink from. Something goes wrong with one and he dreads what the physician might reveal if he knows his condition. He does not wish to be inconvenienced by special treatment or doing unpleasant things, so life drifts on until harmful results come from evasion and delay.

Again, many a life is a misfit into its surroundings and occupation, though probably from no fault of the person, but, from the physician's viewpoint, such a fact should be considered, as this misadjustment may cause inertia, weariness, irritation and other symptoms of poor health. Such a case is as a piece of misadjusted machinery that is ground out by improper fitting and wrong contacts. Love for the work one does or the interest in things and people, full confidence in the Divine Ruler, not only gives joy to life, but brings out its best efforts, and adjusts its intricate machinery to better overcome defects and attacks of injurious forces; for evasion of truth causes many unhealthy diversions and alterations in function besides the evils of suppression. So the training and surroundings of a patient from infancy have their bearing upon the application of treatment. The manner of patient we have in hand should be considered and his need for, or reaction to, certain treatments.

The remedy may be outside of medicine, the laboratory or knife and more tangible things, or may be more complete with these things introduced to the patient as best fits his individuality, in no instance, however, losing sight of individuality, as human beings cannot be treated successfully as a unit or mass. Such a conception of medical art elevates it to a higher position and brings to science a greater field of usefulness by a proper and more complete application of knowledge.

U. S. P. AND N. F. PREPARATIONS VERSUS PROPRIETARY REMEDIES.

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Due to advances in synthetic chemistry and to the activities of pharmaceutical manufacturing houses the multiplicity of remedies offered for the treatment of disease has become so great as to lead to almost hopeless confusion on the part of both physicians and pharmacists.

One of the important tasks of the revision committee of the pharmacopoeia is that of choosing from this endless list, agents of known therapeutic value which are considered essential in the treatment of disease. The pharmacopoeia is intended to be a book of medical and pharmaceutical necessities. It is no longer subject to the criticism that was directed against it prior to the appearance of U. S. P., X, namely, that pharmacists played too large a part in determining the policies with regard to the content of the book. The committee on scope now consists of seventeen physicians and only six pharmacists. Thus it become apparent that the medical profession is responsible for selecting the products which it deems indispensable in the treatment of disease. This fact should commend the pharmacopoeia to the practicing physician.

The National Formulary is prepared by a committee of pharmacists chosen by the council of the American Pharmaceutical Association. It consists largely of drugs and formulas that were formerly official in the pharmacopoeia but which have been deleted because they are no longer considered medical necessities. This does not mean that these products are not highly useful in the treatment of disease, but rather that their use is inclined to be local instead of national.

Too much emphasis can hardly be placed upon the importance of official remedies, that is, those of the U. S. P. and N. F. They have passed through probationary periods of ten to twenty years before being granted recognition. Their virtues have been established by years of experimentation and use both before and after they have been given official status. Their advantages and disadvantages are matters of record in medical literature.

Contrast with this the exploitation of the thousands of synthetics and proprietaries with which the medical profession is deluged at the present time. Some of them are new, many are merely mixtures of well-known products which the physician can obtain by writing a simple name coined by the manufacturer instead of writing an original prescription which his pharmacist can compound.

The use of simple names for synthetics and proprietaries often defeats the aim of the physician by leading to self-medication. The patient reads the name of the remedy, asks for it by name, and then proceeds to tell his friends and acquaintances that his doctor prescribes that remedy for the treatment of a certain condition. In a short while this name becomes public property, with the result that laymen buy and use this remedy without advice from the medical profession. The physician who prescribes official preparations or combinations of them under their Latin titles, abbreviations or chemical names as given in the U. S. P. or N. F., aids materially in reducing self-medication by the laity.

It is surprising how many unofficial synthetics are closely related to the official ones, and how many proprietaries are for the most part mixtures of official products. The pharmacist can prepare almost any mixture the physician wishes and can usually dispense it at less cost to the patient than the use of a proprietary would necessitate.

The wide use of proprietary remedies has undoubtedly disturbed the spirit of mutual understanding that formerly existed between physicians and pharmacists in that it makes less necessary the frequent interviews they formerly enjoyed. Regardless of the many items of merchandise now carried in the average drug store, the pharmacist of the future seems destined to be of greater service to the physician than he is at the present time. Beginning one year hence, all of the recognized schools of pharmacy in America will offer a minimum four year course in pharmacy. It will consist of sound education and of good pharmaceutical training. This will undoubtedly mean fewer pharmacists, but better trained pharmacists.

The purpose of this paper is twofold, namely: (1) to urge a wider use of official preparations in prescription practice; (2) to express the hope that physicians and pharmacists in Virginia may work in closer cooperation to the end that their common cause, the promotion of public health, may be definitely advanced.

ASCHHEIM-ZONDEK TEST FOR PREGNANCY.*

By JOS. J. MUNDELL, M. D., Washington, D. C.

The technique of the test is as follows: The first urine voided in the morning is collected in a clean bottle. One c.c. of tricresol to 25 c.c. of urine may be added to retard bacterial growth. If the reaction is not acid, acetic acid should be added and the urine filtered. Five female mice, three to five weeks old and weighing from six to eight grams, are used for each test. Five mice are used because there is a 10 to 15 per cent mortality, and also because an occasional mouse will not react. The mice are injected subcutaneously twice a day, each mouse receiving 0.3 c.c. of urine at each injection. One hundred hours from the first injection the mice are killed with illuminating gas and autopsied and the ovaries examined. In the positive test the uterus, tubes and ovaries are greatly congested and there is a marked maturation of the Graafian follicles. Hemorrhage in the follicles produces the characteristic so-called blood points. Also there is seen marked luteinization of the corpora lutea. These changes are readily seen with the naked eye and are very pronounced. Of course microscopical examination is also made. To date we have had 200 tests with 100 per cent accuracy,—that is, the diagnosis has been proven by further clinical observation in every case.

The laboratory was not furnished any data with the specimens that were sent in, and in many instances urines from non-pregnant women were forwarded in order to check the efficacy of the test.

In one case the urine one day after the first missed period was negative but was positive on the tenth day.

Another case was negative five days after the first missed period but positive on the fifteenth day. Thus our earliest positive case was ten days after the first missed period. Also two extrauterine pregnancies from six to eight weeks' gestation were positive.

It is said that the test is positive in hydatidiform mole and chorioepithelioma in which it is of inestimable value in determining whether all live chorionic villi have been either expelled or removed by curettage, for so long as any viable villi remain the test will be positive.

Our series simply confirms the reports of numerous other investigators. Though the procedure was introduced less than three years ago, it has been universally accepted as valuable diagnostic aid comparable to other well established tests.

However, I would offer a note of caution in that we should not be over-enthusiastic, but rather wait for the element of time before accepting it whole-heartedly. If time proves it to be dependable, it will be a boon to us in many instances that are obvious. Had the renowned Playfair had access to this test he would have been saved humiliation as well as a good sized fortune. Almost at the end of his illustrious career and with about $100,000 which he had been able to save as his old age competence, he was consulted by a woman whose husband had been in foreign lands for a year or more. He diagnosed her condition as pregnancy and the diagnosis was broadcasted. In the course of time it was proven that she was not pregnant but had a fibroid tumor. The lady's husband sued Playfair and obtained a judgment for $65,000.

The explanation of this test is that it is dependent upon the hormone or hormones of the anterior lobe of the pituitary which are present in abundance in the blood and urine during pregnancy, especially in the earlier months.

The recent epochal work upon the pituitary has created a furor in medical annals particularly affecting gynecology and obstetrics, as evidenced by the countless number of articles appearing in the current literature.

Investigators are not in accord as to just what these hormones are that produce this reaction. Some among them think that there is only one, acting differently under certain conditions, but the majority feel that there are at least two or more. Aschheim and Zondek state that there are two, which they designate Prolan A and Prolan B, the first acting upon the follicles, the second causing the excessive luteinization. As a result of these investigations, the pituitary has come to be known as the motor and regulator of the ovary.

We of the present day and age are apt to accept ourselves with complacency and regard the recent advances in endocrinology with much pride, but it is a sad commentary that an explanation is just forthcoming of conditions that have been recognized for many centuries. For instance, there are many biblical references that very plainly describe endo-

*Read at the annual meeting of the Medical Society of the District of Columbia, May 6, 1931.

crinological mal-adjustments. In the description of Nimrod, Samson, Judith and Jezebel one can well imagine that they showed evidence of endocrine dysfunction. The hypo- and hyper- influence of the pituitary likewise can be visualized from the description in Genesis, chapter 25, of the twins Esau and Jacob. The former, at birth, was red and hairy and grew to be a mighty hunter and a man of the fields, whereas Jacob was the direct opposite, being a smooth man who lived in tents.

Also in the well known incident in St. Mark, chapter 5, verse 25: "And a woman who was under an issue of blood twelve years and had suffered many things from many physicians and had spent all that she had, and was nothing the better but rather the worse, when she heard of Jesus, came in the crowd behind Him and touched His garment, for she said if I touch but His garment I shall be whole. And forthwith the fountain of her blood was dried up and she felt in her body that she was healed of the evil."

We now know that this woman could have been cured without resort to the supernatural by an intrauterine application of radium, and, too, we now know that her bleeding was due to the over-activity of one of the hormones of the anterior pituitary, but, just think of it, it has taken 2,000 years to find it out.

These tests were done at the Naval Medical School through the courtesy of Captain C. S. Butler, the Commanding Officer.

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THE EARLY DIAGNOSIS OF CARCINOMA OF THE BREAST.*

By I. A. BIGGER, M. D., Richmond, Va.

The education of the public to the importance of early diagnosis of cancer is creating difficult problems for the physician. This is especially true with regard to breast lesions. Until recent years he did not see the patient until the lesion was well advanced and the diagnosis obvious. Bloodgood's early figures show that of the patients presenting themselves for examination of the breast 80 per cent had carcinoma and 50 per cent of these were inoperable. His recent figures, however, show 17 per cent to be malignant, 18 per cent benign, and 65 per cent non-operative. Only 5 per cent of the malignant cases are inoperable. Since patients are presenting themselves earlier, it is essential that the physician be prepared to diagnose them. The textbook description of carcinoma of the breast is rapidly changing from that of an advanced to that of a relatively early lesion. Unfortunately too much stress is till placed on some of the late signs of cancer.

The diagnosis of carcinoma of the breast must be made largely on the basis of the physical findings. The family history is of no importance in the individual case and even the personal history is of little importance except in so far as it relates to the duration of the tumor and the amount and type of pain. The longer the duration of the lesion the greater the possibility of its being benign. Cheatle believes that a stabbing pain is frequently an important early symptom, but the majority of observers consider pain of slight importance.

Physical Examination. In examining the breast it is necessary to have both breasts adequately exposed, so that they can be examined and compared. Careful inspection should be made with the patient in both the upright and recumbent postures, particular attention being

Fig. I.—Moderately advanced carcinoma of the left breast.

paid to the nipple, with regard to its size and position. The relative elevation of the nipples should be determined with the patient in the erect posture. The skin over the breast should be inspected to determine discoloration, edema,

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From the Department of Surgery, Medical College of Virginia.

and dimpling of the skin. The chief point of interest in the inspection of the breast with the patient in the recumbent posture is its contour, as a tumor of small size will frequently show up as a definite elevation.

Palpation of the breast should be done with the palmar surface of the fingers against the chest wall and also with the breast tissue caught up between the thumb and fingers. When the breast is palpated between the thumb and fingers the individual breast lobules are considerably magnified and are apt to feel like distinct tumors. However, when the breast is palpated between the palmar surface of the fingers and the chest wall these lobules are less prominent. A nodule felt by this method of palpation is, therefore, significant. If such a nodule is felt, it should be examined to determine its mobility. Benign, solid tumors of the breast, especially those that are encapsulated, are freely movable and malignancy may be readily ruled out. Cysts are less freely movable but are not completely fixed to the surrounding breast tissue. Furthermore, if the cyst is superficially located, fluctuation can often be made out.

Malignant tumors of the breast, on the other hand, are well described as being "frozen into the surrounding breast tissue." If the nodule appears to be adherent, its relationship to the skin and underlying structures should be determined. The adherence to the skin can be determined either by carefully displacing the tumor and noting the presence or absence of dimpling, or by lifting the skin away from the breast tissue and tumor. The appearance of dimpling of the skin by either of these manoeuvers is of great significance. It should also be determined whether or not displacement of the tumor causes retraction of the nipple.

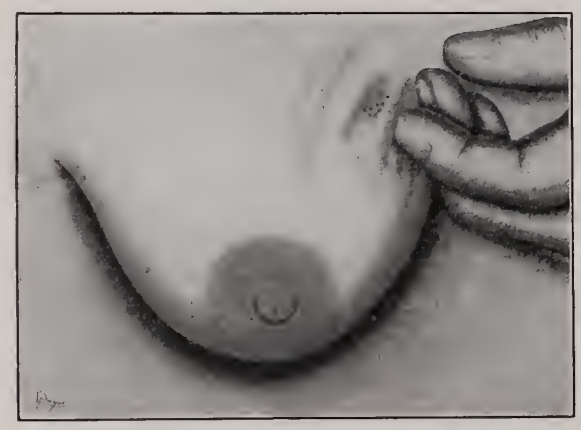

Fig. II.—Dimpling of the skin on displacement of the tumor shown in early carcinoma of the breast.

Transillumination of the breast should be carried out as described by Max Cutler, as in this way solid and cystic tumors can frequently be differentiated. It is necessary to have a strong white light and the patient must be placed in a completely dark room. The portion of the breast under suspicion is then transilluminated by placing the light beneath the breast and determining whether or not there is opacity in the region of the nodule. If the nodule is a simple cyst, transillumination will be as complete as, if not more complete than, through the surrounding breast tissue. If the nodule is a solid tumor it will not transilluminate. Papillary cystadenomas and cysts containing blood or milk do not transilluminate well.

The axillae are next examined for enlarged lymph glands and a definite routine should be developed for this examination. Glands in the loose areolar tissue may be displaced and not felt when the fingers are placed in the axilla and pressed upward and inward. If, however, the arm is abducted and the examiner's fingers placed high in the axilla and the arm then partially adducted and the fingers swept downward against the chest wall, any enlarged glands in the loose areolar tissue will be caught between the tips of the fingers and the chest wall. After the axillae have been examined, the supra-clavicular region should be palpated.

The skin over and surrounding the breast should be examined for metastases. Skin metastases are more easily felt than seen and, if the fingers are run lightly over the surrounding skin, the small, hard, intracutaneous nodules can be palpated.

If the nodule in the breast is apparently malignant, the upper right quadrant of the abdomen should be palpated to determine the size and consistency of the liver. The examination should be completed by an X-ray of the chest.

If the nodule appears to be a definite tumor and is not obviously malignant, it should be excised for gross and microscopic examinations. It is important that the patient be prepared for a radical operation before excision of the tumor. If a definite diagnosis cannot

be made on the basis of the gross appearance, microscopic examination should be made, and if the tumor is malignant, radical operation carried out immediately.

Fig. III.—Orange peel skin indicative of late lesion.

Differential Diagnosis. There is little difficulty in the diagnosis of benign, encapsulated adenomas, for they form sharply defined, freely movable tumors. Difficulty is frequently experienced in differentiating deep-seated cysts, localized non-encapsulated mastitis, and traumatic fat necrosis from malignant tumors. Superficially located cysts can, as a rule, be diagnosed on the basis of fluctuation, lack of firm attachment to the surrounding breast tissue, and especially by transillumination. If a tumor in the breast shows fluctuation and transilluminates it is in all probability a benign cyst. If it apparently fluctuates but does not transilluminate well, it may be either a benign or malignant cyst. A malignant cyst is filled with either a blood-tinged fluid or a thick, grumous material which does not transilluminate.

It may be difficult to differentiate a deeply located cyst from a solid tumor, as it is often impossible to demonstrate fluctuation. If the breasts are pendulous, the cyst can usually be manoeuvered into a position where it can be transilluminated. If the breasts are not pendulous, transillumination is apt to be unsatisfactory.

A cyst, as a rule, will not show evidence of adhesion to the skin and underlying structures; but if it has undergone an inflammatory change, dimpling of the skin may be produced on displacement of the tumor. In such a case, a definite differential diagnosis cannot be made without surgical incision.

Traumatic fat necrosis may be diagnosed easily, where there is a history of recent injury with the appearance of a lump at the point of injury, located immediately beneath the skin and accompanied by pain and tenderness. If, however, the area of necrosis is more deeply located and there is no definite history of injury, differential diagnosis may be difficult and can often be made only by exploratory incision.

The nodule in the breast which it is most difficult to differentiate from carcinoma is the localized, non-encapsulated area of chronic mastitis. It often is adherent to the skin and may show retraction of the nipple. It is not freely movable in the breast tissue and is apt to show little pain or tenderness. If it is associated with multiple nodules in both breasts, a chronic cystic mastitis should be strongly suspected. If not, a definite diagnosis can be made only by exploratory incision, and even then difficulty may be met with in determining the question of malignancy.

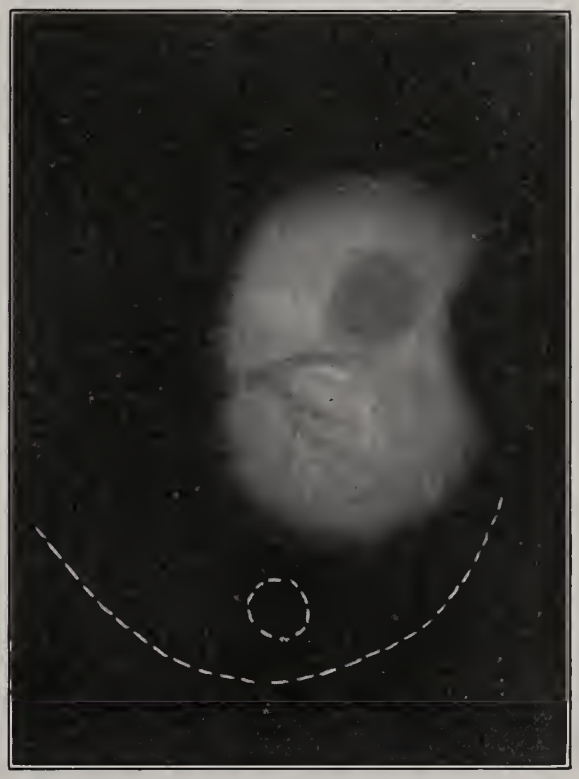

Fig. IV.—Sketch showing the appearance of carcinoma of the breast on transillumination.

Summary. The progress in the education of women as to the importance of the early recognition of a nodule in the breast has greatly increased the physician's difficulty in the differential diagnosis. Fortunately, it is relatively rare to have an advanced carcinoma of the breast—in the stage in which diagnosis is obvious—come in for treatment. As the percentage of patients with early and benign lesions appearing for examination increases, the difficulty of diagnosis is increased.

The diagnosis has to be made largely on the basis of physical examination and, in questionable cases, on the basis of the gross and microscopic appearance of the tumor. The most important single physical sign of malignancy is the "freezing of the tumor to the surrounding breast tissue." Other important signs of malignancy which are apt to be present even in early cases are dimpling of the skin on displacement of the tumor and retraction of the nipple on displacement of the tumor. It is important to distinguish between dimpling of the skin produced by displacement of the tumor, due to the shortening of the fibrous trabeculae in the subcutaneous tissue, and that due to lymph edema. The former is apt to be present in early carcinoma of the breast, while the latter is a late sign.

Axilliary, supraclavicular, and skin metastases, and fixation to the chest wall, all are late signs and, while they make the diagnosis easy, they also make the prognosis poor.

Finally, in questionable lesions, it is essential that gross and microscopic examinations of the tissue be made and immediate radical operation done in case of malignancy.

DEFORMITIES OF THE COLON: LOW CECUM WITH ABSENCE OF ASCENDING COLON AND HEPATIC FLEXURE: CASE REPORT.

By JOHN A. REED, A. B., M. D., Washington, D. C.

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Deformities of the colon are in the main congenital and are not particularly uncommon, having been described at some length by many authors. The clinical interest in these cases lies in the associated symptomatology, prognosis, treatment, and the bizarre visualization by roentgenological study; their clinical importance is a knowledge of their existence prior to operative intervention in concurrent abdominal surgical conditions. The deformity described as the low cecum is one of the most common of all colon anomalies, occurring in about 18 per cent, according to Kantor,[1] of all deformities of this part of the bowel. The following case, however, is presented because of its association with an absence of the ascending colon and hepatic flexure.

Case Report

M. R. H., age 31, male, white, married, occupation fireman.

History of Chief Complaint and Present Illness.—He was first seen by me April, 1931, with a chief complaint of diarrhea. This condition first began in 1926 while at work in the repair shop, coming on rather suddenly with six or seven bowel movements a day, watery in character, accompanied by occasional abdominal cramp, but no blood or mucus. The movements apparently came on any time of the day. Shortly after the onset of these symptoms, he left the repair shop, and the symptoms stopped. No connection, however, could be established between the symptoms at that time and his environment. In May, 1928, the diarrhea began again with six watery movements a day, similar to the previous attack.

Fig. 1.—Visualization of cecum, transverse colon, and splenic flexure six hours after ingestion of barium meal.

This condition has continued since with varying periods of freedom from the diarrhea and having apparently normal formed movements. He now sometimes feels weak, and for three weeks prior to his first visit believes that he had lost some weight.

Previous Illness.—With the exception of measles in childhood, mumps, about nine years ago, and scarlet fever about six years ago, there is no pre-existing illness other than described under history of present illness. No other data obtained of the previous history is relevant.

Family History.—Mother, living and well, age 52; father died at the age of 38, cause given as "leakage of the heart". Two brothers are living and well, no brothers or sisters dead. There is no evidence revealed under family history suggesting any congenital deformities in the forebears.

Physical Examination. — Well nourished, muscular man of the sthenic type. Eyes react to light and accommodation. No evidence of infection about the teeth, tonsils, or sinuses. Tongue clean. Temperature, pulse, and respiration normal. No glandular adenopathy.

Fig. 2.—Twenty-four hours after ingestion of barium meal, showing cecal residue and relation of cecum to sigmoid and rectal pouch.

Joints and musculature normal. Lungs and heart normal. Abdomen is rather hard due to splendid muscle development of recti, slight tenderness over descending colon. No abnormalities of spleen, liver or kidneys. Prostate gland normal. Extremities normal. No neurological or psychiatric manifestations found. Proctological examination was normal except

Fig. 3.—View of entire colon visualized by barium enema, showing low cecum, an apparent filled retrocecal appendix, no ascending colon, or apparent hepatic flexure.

for the presence of a small polyp at the rectosigmoid juncture.

Gastric Analysis.—(After Ewald Test Meal). Free hydrochloric acid 42, total acidity 50, benzidine one plus, microscopically negative.

Urinalysis.—Straw, clear, acid, specific gravity 1020, no albumen, sugar, diacetic acid, pus, casts, or red cells.

Feces.—Brown, semi-formed stool, small amount of macroscopic and microscopic mucus, no macroscopic or microscopic blood, considerable granular debris, some undigested vegetable material, occasional undigested starch granule (iodine stain), few undigested meat particles, few fatty acid crystals, considerable neutral soaps, abundance of blastocystis hominis, no ova or protozoa. Culture: streptococcus viridans, bacillus coli communis (nonhemolytic and hemolytic), bacillus coli communis and other saphrocytes.

Roentgenological Study.—X-ray of the gastro-intestinal tract shows no evidence of organic pathology. There is a congenital ano-

maly in that there is apparently no ascending colon or hepatic flexure. The cecum is low, being visualized just above the symphysis. The transverse colon seems to go directly upward from the cecum from the midline at a point about the middle of the sacrum to the splenic flexure. The appendix is well visualized and is apparently retrocecal. Fluoroscopic study of the colon with a barium enema: about 800 c.c. of barium mixture was used, and the colon filled from rectum to cecum. The splenic flexure was unusually high, extending well up to the level of the diaphragm and could not be palpated on account of the lower ribs, but moved about three inches with each respiratory cycle. The transverse colon extended downward into the pelvis and was grouped together with the cecum below the brim of the pelvis. Flat plate before defecation demonstrates the same thing as was seen under the fluoroscope. The appendix was visualized. Flat plate after defecation gives no additional information. Summary of barium enema study: Displacement of the splenic flexure upwards, with a low cecum, and absence of hepatic flexure and ascending colon.

Diagnosis.—The diagnosis in this case, of course, resolves itself into an interpretation of the roentgenological study. The clinical tentative diagnosis was irritative colitis of a spastic type probably with exogenous etiology.

Treatment.—The treatment of the case presented was symptomatic, consisting of a bland, non-irritating, non-residue diet, and intestinal antispasmodics, and sedatives. No measures were instituted for the correction of the congenital abnormality, as that in itself was not incapacitating the patient. At the expiration of two weeks the acute irritative process was relieved with normal stools evacuated.

Comment

One expects to find structural and anatomical abnormalities of the colon, such as described, associated with malstatic states, as suggested by Mills and Soper,[2] or acompanying the so-called asthentic habitus,[3] or visualized in an abnormal position, sometimes following abdominal surgery due to adhesions. The case presented was not associated with any of the usual body deformities nor was there a pre-existing operation. The case was monosymptomatic, and did not present the usual symptoms seen generally, as vomiting, headaches, or constipation. In view of the rather prolonged history of diarrhea, it was felt that there might be more pathology present than a

Figs. 4 and 5.—Two views showing cecum and what appears to be the transverse colon after defecation of the barium enema.

simple colitis. The prognosis of the case presented is good.

SUMMARY

A case of low cecum with absence of ascending colon and hepatic flexure is presented.

BIBLIOGRAPHY

1. Kantor, John L.: The Common Affections of the Colon, Their Origin and Their Management. *Bull. New York Acad. Med.*, 2nd series, 1929, Vol. 5, pp. 757-788.
2. Mills, R. Walter, and Soper, Horace W.: Studies of the Colon. *Am. J. Roentgenol.* June, 1924, Vol. 9, No. 6, pp. 487-508.
3. Kantor, John L.: A Clinical Study of Some Common Anatomical Abnormalities of the Colon: 2. The Low Cecum. *Am. J. Roentgenol.*, Vol. 14, No. 3, pp. 207-215.

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OBSERVATIONS IN 500 CASES OF ACNE, TREATED WITH 2,432 EXPOSURES OF X-RAY.

By C. AUGUSTUS SIMPSON, M. D., Washington, D. C.

Our experience with this form of therapy dates from 1911. A letter from our distinguished guest to Dr. Max Joseph, of Berlin, was the means of an opportunity to observe and see the results of the directly measured dosage of X-rays, computed by the Sabauraud pastile, using a Sabauraud, later a Hampsen meter with a Wehnelt penetrometer, a half of a fresh pastile in each case treated and employing a coil machine with a gas tube, the same as Joseph. I have to thank Providence that I came through the following years of this ordeal without any burns among my acnes treated.

The technique with pastiles, radiometer and penetrometer were demonstrated to this Society by me in a paper read May 8, 1912. This was the first paper on indirect measuring by pastiles to be read in America.

The subject of this report is a series of later cases treated by the indirect measuring method popularized by MacKee, Fox and others, using a transformer and a broad focus Coolidge tube. With this, one is able to control the voltage, establish certain constants, and maintain or vary them at will. However, I consider my training with the pastile as very valuable. All beginners should be acquainted with it and would do well to test out their modern machines with the pastile, or give experimental doses of ray to themselves or assistants, before undertaking Roentgen-ray treatments of patients.

Considering the pathology of acne in part as a hypertrophic, enlarged or over-active sebaceous gland, associated with a hyperkeratosis and infection, is it any wonder that a purely local and internal medicinal form of therapy could be anything but tedious and most often disappointing?

It is unreasonable to suppose that any drug can shrink or atrophy more than temporarily a hypertrophic gland some distance below the skin surface. Various lotions and salves used on the part do not meet the indications in the pathology of acne, and can now be considered only as adjuncts to X-ray therapy. The same holds true of all internal treatment, the various diets, hygienic measures, the correction of constipation, indigestion, menstrual disorders, and focal infections.

X-ray and radium are the only two agents which can achieve such a permanent atrophy, and it is for this reason that most authorities consider Roentgen-ray the most valuable agent in the treatment of acne.

The X-ray remains today the dangerous instrument it always was in the hands of the inexperienced. It has no place in the office of a beginner, nor should it be used by a technician who is not constantly supervised by an experienced physician. In our office, the technique is checked twice by one of us. We believe it is only by such painstaking methods we are able to report such a large number of X-ray exposures without a single case of radiodermatitis or damage to the skin in acne. No physician should be so busy that this added safeguard is denied his patient.

The number of patients treated in this report is 600. Two-thirds of this number were females. The interval between treatment in 500 was ten days. Patients living at a distance could not be seen or treated except at intervals of three weeks, four weeks and six weeks. These numbered 100. This leaves 500 patients who received an average of four to five exposures. Our failures after such treatments were less than 11 per cent. The number of treatments given were 2,432. We found most of the recurrences were of the menstrual type, which subsided under a second series of four treatments or less.

The small number of treatments given were due to the fact that Kromayer lamp exposures, and the usual acne lotions, as lotio alba, curettement and removal of comedoes with general

therapy, when indicated, were carried out at the same time.

We found that without the X-ray, and relying on the Kromayer and Alpine lights with the usual local and internal treatments, our results were greatly handicapped and prolonged more than four times the usual duration of two months. Even then the tendency to recurrences was much greater.

We also found that very few patients were benefited by vaccines, and their use has been discontinued except in a few intensely pustular types when we employed a mixed staphylococcus stock vaccine with some benefit in conjunction with their other treatment.

A very important part of our technique was the employment of a layer of thin chamois skin over every area treated. This seemed to eliminate the discomfort of static reactions and currents. We believe this thin filter lessens the chances of pigmentation reported by some dermatologists. We believe that with the addition of X-ray exposures, the time it takes to clear up the usual case of acne is reduced three-quarters.

Our technique was 100 K.V., 6 inch gap, 3 milliamperes, 10 inch target skin-distance, 1 minute of time, giving 1/3 of an erythematous skin dose.

Although acne is a localized disease of the sebaceous glands of the face, back and shoulders, and, as such, should receive antiseptic and astringent lotions and ointments, there is no doubt that any number of constitutional disturbances exaggerate the disease. Indigestion, constipation, anaemia, menstrual disorders, focal infection—in fact, it resembles eczema in that many general conditions lower the vitality or good health of a patient with a tendency to acne,—call forth an attack or a relapse. These conditions should be sought for and corrected in all cases, as quick results will lessen the chances of indelible scarring.

On the contrary, the same general factors may be present in a patient with xerodematous skin and yet no acne is to be found. Hence, we consider all of the general disorders above enumerated as only contributory factors, not constantly present, varying in their intensity, quite questionable in their influence, having little effect on the basic pathology of the disease, and, as such, are not the cause of acne.

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FIVE CASES OF OSTEOGENESIS IMPERFECTA IN THE SAME FAMILY.*

By RICHARD MASON, M. D., The Plains, Va.

This little girl, who is now sixteen years old, first came under my care at the age of two years, at which time she had sustained a fracture of the femur from a trivial fall while she was toddling about the floor. This fracture was reduced and a Buck's extension apparatus applied, with excellent results, the fracture healing without any deformity in about eight weeks. However, in a short time another slight fall caused a fracture of the tibia in the other leg, which was treated by reducing it and applying ordinary wooden splints with sandbags on either side of the fractured leg to hold it in place. This was followed by results equally as good as the first fracture. Since that time she has sustained numerous fractures of the lower extremities, both femurs and both tibias and fibulas being involved at different times making twelve fractures in all, and always from some slight fall or other trivial cause.

On one occasion when I was called to see her she had turned over on the floor in a rocking chair and broken both legs at the same time. At first these fractures united in about the usual time it takes fractures of this kind to get union, but as the disease progressed the bones became softer, especially the leg bones, and, when the patient would begin to walk again, although union had taken place, the bones would bend from the weight of the body and become angulated at the site of the fracture, finally becoming so deformed that the patient could scarcely walk at all.

She was then sent to Dr. Thomas Madden Foley, of Washington, D. C., who did several osteotomies on her, straightening the legs and applying braces to hold them straight. The braces were kept on about two years, during which time the patient was able to walk some distance to school everyday. About four weeks ago he removed the braces, and, as you will see, she is now walking almost as well as if she had never been a cripple. Dr. Foley deserves great credit for converting this child from what seemed an almost hopeless cripple into a bright and happy girl with two perfectly good, useful legs.

Now, if the doctors present will come near enough, you may easily see the gray-blue ap-

*Case presented before the July meeting of the Fauquier County Medical Society, at Warrenton, Va., July 30, 1931.

pearance of the sclerotics so well described in Blumer's "Bedside Diagnosis." This condition is ascribed to an extraordinary transparency of the whites of the eyes which allows one to see the dark pigmentation of the choroid beneath. Five of the children in this family of eight have these gray-blue sclerotics, and two others, one older and one younger than this little girl, have had three fractures each of the lower extremities.

On taking the family history, we find that the father had five fractures during his childhood and, though he is now forty-eight years old, the gray-blue sclerotics are still easily noticed on close observation, so it would seem that this symptom persists throughout life. It is said to be pathognomonic of this disease.

We also get a history of the paternal grandfather in this family having broken his legs three times from slight falls during his childhood, illustrating that the disease is both hereditary and familial. The underlying causes are still unknown.

Osteogenesis imperfecta has to be differentiated from the various osteopathies, and the diagnosis in this case was arrived at by first eliminating rickets, which was the "label" on this family, handed down through two generation. Rickets is easily ruled out by the absence of the enlarged epiphyses, also the rachitic cachexia and history of undernourishment, this family having been always well-nourished, the two children who are unaffected by the disease being very robust.

Two of these children are also slightly deaf, which is said to be a quite frequent complication and is due to otosclerosis of the petrous portion of the temporal bone and the angle between the anterior border of the stapes, the upper edge of the promontory and processes cochleariformis. In some patients, according to Ruttin, cochlear lesions are also present.

Then, next, we had to eliminate the various tubercular and syphilitic bone diseases, which was comparatively easy as there was no history of either tuberculosis or syphilis, nor were there any symptoms, objective or subjective, of either of these diseases in this family.

Probably the most difficult disease to differentiate from osteogenesis imperfecta is a rare condition known as osteosclerosis fragilis congenita. This latter disease, however, is apparently not hereditary or familial, does not show the blue sclerotics, and, in case of doubt, the X-ray picture would clear up the diagnosis, for the rarefied bones of osteogenesis imperfecta make a picture antithical to the eburnated or "marble bones" of osteosclerosis fragilis congenita.

No treatment has been found to have any particular effect on the course of the disease except surgery, by which, as is shown in this case, much may be done to correct the deformities caused by the frequent fractures.

The prognosis is that the tendency to these fractures continues through childhood, but at puberty or a little later the rarefied bones begin to take on a more normal development and resistance and the tendency to fractures disappears in many cases. So that, we feel this little girl, whose bones have responded so well to Dr. Foley's skillful surgery, is now well "out of the woods."

I have presented this patient to you this evening because the case seemed to me one of unusual interest, not only to the surgeon and general practitioner, but, on account of the eye and ear complications, to the ophthalmologist and otologist as well.

References

1. Stevens' Practice of Medicine, Second Edition.
2. Blumer's Bed-side Diagnosis, Volume 1, pages 605 to 611.

INFECTIONS OF THE UPPER RESPIRATORY TRACT IN CHILDREN.*

By THOMAS D. JONES, M. D., Richmond, Va.

It has been stated that 90 per cent of the diseases of children have their origin above the neck. This statement is perhaps not far from the truth, especially during the late fall, winter, and early spring months, when certainly the overwhelming majority of ailments encountered in pediatric work are easily traceable to infections of the upper respiratory tract. The prevalence of infections of the respiratory tract was duly emphasized by Sydenstricker, of the United States Public Health Service, who found that more than half of the total deaths were due to respiratory diseases, notwithstanding the fact that the ratio of illness to deaths from respiratory causes was three hundred to one.

These infections may mean anything from a cold in the head with slight local discomfort and practically no systemic disturbance, the process ending there, or it may spread over

*Read before the Northside Hospital Staff, at Richmond, February, 1931.

other portions of the respiratory passages, including pharynx, tonsils, bronchial tree, lungs and sinuses, leading to a serious or even fatal termination, so that danger is ever lurking in the common cold, and, however trivial it may appear in its beginning, we should be ever mindful of the possible serious consequences and use our best efforts to prevent its occurrence or arrest the process of its incipiency.

I shall only attempt in this paper to briefly discuss the familiar picture, met with in pediatric practice during this season of the year, commonly referred to as grippe, influenza or upper respiratory infections, the latter perhaps being the most comprehensive term, with brief references to some of the important phases of symptoms, complications, and treatments.

Symptoms: The onset in children is usually sudden. Fever is practically constant and may range from 100 to 106. Older children frequently complain of headaches, muscular pain and sore throat. Nausea and vomiting is very frequent in children and may be very troublesome, or even serious, leading to ketosis or acidosis. In the mild uncomplicated cases, the above symptoms are the chief ones encountered, and the case will go on to recovery in two or three days.

Complications: Otitis media is probably the most frequent complication, and usually makes its appearance not earlier than two or three days after the onset. A sudden rise in temperature is usually the first and sometimes the *only* thing noticed. Infants usually become more restless, and older children often, but not always, complain of pain in the ear.

Adenitis occurs with such frequency that it is questionable whether or not it should be considered a complication. The glands in the front of the neck are nearly always palpable, but as a rule the enlargement is slight and does not often demand any special attention. It does, however, become troublesome in a small percentage of cases. and may be responsible for continued fever for days or weeks. The glands do not often go on to suppuration—probably not over 10 per cent of the cases in which the glands become greatly enlarged with abscess,—and the process is slow and does not "ripen" as a rule for several weeks after the onset of the disease.

Bronchitis may be evident from the beginning, but usually comes on, when it occurs, in two or three days after the onset.

Laryngitis is perhaps always present when bronchitis occurs, but does not often present troublesome symptoms, only a small percentage of the cases having croup. When croup develops the condition may be very troublesome or even serious. necessitating intubation or tracheotomy. These cases, however, are fortunately very rare.

Pneumonia rarely develops for several days after the onset of the disease, and will not be discussed here.

Mastoiditis is practically always a late complication and not a very frequent one, but its possibility should always be considered, especially where middle ear infections occur.

Sinus infection probably occurs more frequently than it was formerly thought but is not often recognized as an early complication.

Pyuria is not at all uncommon following these infections, especially when the glands and sinuses become involved. Involvement of the tonsils is usually only a part of the general picture. One never sees a sharply demarcated tonsillitis in these cases.

Diarrhoea, acute intestinal intoxication, or cholera infantum, are very rarely if ever troublesome complications. Frequent watery stools are not uncommon, but rarely demand special treatment. When the severe types of intestinal intoxications with profuse watery diarrhoea occur in infants suffering from respiratory infections, it is probably a separate and distinct clinical entity, and not a complication. A great deal has appeared in the literature in the past few years concerning mastoid infections as a cause of intestinal intoxication, there being many adherents to this belief. The result of the very exhaustive study of Wishart, of Toronto, of a large group of children at the Hospital for Sick Children has brought out some very interesting facts. He found that the onset of acute intestinal intoxication was rarely characterized by "cold," and that the great majority of infants suffering from the disease showed no evidence of respiratory disease. He found that accumulations of infections found in the mastoid at autopsy were ante-mortem in origin. Both eardrums frequently showed abnormality immediately preceding death, and was an ante-mortem phenomenon due to the forcible ejection up to the eustachian tubes. Bilateral mastoid operation

as a cure for the disease was a failure. Thirteen were operated upon and only one recovered. There was no correspondence between the bacteriology of infections of the respiratory tract and that in the intestinal tract. His very definite conclusion as a result of the work was that infection of the mastoid antrum is not a cause of acute intestinal intoxication.

Treatment: Obviously our most serious consideration under this head should be directed along the line of prevention as far as possible. Unfortunately we have no specific agents at our command for this purpose. The use of vaccines has been advocated by various workers, and wide differences of opinion concerning their value have been reported. There seems to be evidence of good results in some cases, but such effect is by no means uniform and at the present time does not appear to offer a great deal of promise, so that the most prominent field now appears to lie in the direction of the correction or removal of the generally recognized predisposing causes.

Diseased conditions of the nose and throat should, of course, be corrected whenever a pathological condition is obvious; however, too much cannot be promised from this procedure, as recurrences of respiratory infections are often frequent after the removal of definitely diseased tonsils and the correction of diseased nasal conditions. In a careful comparative study of twenty-two hundred tonsillectomized children with an equal number of controls three and ten years after the operation, Kaiser, of Rochester, N. Y., reached some very definite conclusions. The apparent benefits during the first few post-operative years were not so evident over a ten year period. Outstanding benefits were apparent in the incidence of sore throats over a ten year period. Benefits were likewise apparent in rendering children less susceptible to scarlet fever and diphtheria. Acute head colds and otitis media were definitely lessened over a three year period but not influenced over a ten year period. Cervical adenitis was definitely reduced over a ten year period. Laryngitis, bronchitis and pneumonia occurred more frequently in the tonsillectomized children. He states in the final summary of the results of his studies that late results seen in this group of twenty-two hundred tonsillectomized children ten years after the operation were evident only in the reduction of sore throat, cervical adenitis, otitis media, scarlet fever, diphtheria and heart disease. This is certainly no argument against the removal of diseased tonsils, but does indicate what may be expected in the prevention of respiratory infections following the removal of tonsils.

The matter of proper feeding with due regard for proper proportions of food elements and vitamines should receive thoughtful consideration. The routine administration of cod liver oil to children during the winter months is of unquestionable value in lowering the incidence of respiratory infections, and is superior to irradiated ergosterol for this purpose because of its vitamine A content.

Improper clothing might in some cases be a predisposing cause, and the child should always be clothed according to climatic requirements, disregarding the time of year. Adequate sleep and plenty of fresh out-door air are also essential in keeping up the bodily resistance.

Improperly heated or poorly ventilated living rooms should also engage our attention. The dry heat of many apartments is often a strong factor in lowering the resistance to respiratory infections.

The importance of avoidance of exposure to infections of the respiratory tract is a preventive measure too frequently given scant consideration. Infants and children showing even mild symptoms of colds should be kept away from other children. Birthday parties in steam heated and improperly ventilated apartments are a frequent cause of the spread of the infection among children. We should not lose sight of the fact that the same organism or virus that might result in nothing more than a cold in the head in one child may, if transmitted to another child, cause mischief enough to result in a serious or even fatal termination. Various organisms have been indicted as a cause for the infection, including staphylococci, streptococci, micrococcus catarrhalis and pneumococci. The works of Shibley, Dochez and Mills apparently throw some light on this phase of the subject. They found that the infection could be transmitted from man to chimpanzee and from man to man by means of Berkefeld filtrates of nasal washings obtained from individuals suffering from cold. A significant fact of the infection in apes from the filterable virus was the stimulation into great activity of organisms already present in

the respiratory flora. They attribute the contagiousness to the virus, which they believed had the capacity to incite activity on the part of the more dangerous pathogenic organisms that infest the upper respiratory tract, and offer this as an explanation for the marked secondary activity of such organisms as the pneumococcus, streptococcus haemolyticus and Pfeiffer's bacillus, which sometimes lead to the severe sequelae following common colds and influenza. Their conclusions were that the contagious cold was caused by an invisible, filtrable and uncultivable agent, which in all likelihood belongs to the group of so-called submicroscopic viruses.

A change of climate to any locality where it is warm and dry and much of the time can be spent out of doors with comfort would in some cases materially lessen the incidence of respiratory infection.

Curative Treatments: If the potential dangers of the infection are borne in mind, much may be accomplished in preventing complications and sequelae. The child should be put to bed and kept in bed for at least twenty-four to forty-eight hours after the temperature has dropped to normal. In the mild cases no special symptomatic treatment is indicated. The administration of some alkaline preparation is perhaps indicated in all cases and may have the effect of lessening the tendency to acidosis. Bicarbonate of soda is perhaps the most commonly employed agent for this purpose.

The routine use of mild astringents in the nose may lessen the chances of the infection extending into the ear or accessory sinuses. For this purpose, neo-silvol or argyrol or some of the oily preparations of ephedrine or adrenalin are useful. In young infants where the nasal secretions are crusty and the breathing is very stuffy a weak oily solution of cocaine alkaloid has a very happy effect.

The diet should be of the non-ketogenic type, consisting chiefly of fruit juices and carbohydrates. In bottle-fed infants, if there are evidences of nausea or spitting food, it is well to substitute orangeade for two or three bottle feedings and the formula should always be weakened. The infant's digestive capacity is constantly diminished in these infections. The above plan of management will take care of the digestive disturbances in the majority of cases. In a small percentage of the cases, however, vomiting may be persistent from the onset of the disease and the above plan of management cannot be instituted. In these cases colonic irrigation with sodium bicarbonate solution (1 oz. to a quart of water) and the administration of some form of glucose by bowel will usually control the condition. Occasionally, however, all of these measures may fail and more drastic management may have to be instituted, such as the administration of saline, or Ringer's solution intravenously, intraperitoneally, or subcutaneously. Or glucose may be used either by the intravenous or intraperitoneal route. If the latter method is employed, not over 5 per cent glucose should be used. These latter measures, however, very rarely have to be employed if the case is properly handled from the beginning.

Adequate rest and sleep are also essential in the management of these cases. If the child complains of pain or becomes very restless, the administration of aspirin alone or in combination with Dover's powders or luminal will add a great deal to the child's comfort. Bromides may be of value in some cases, but have never been very satisfactory in the writer's hands.

The management of all of the complications will not be gone into in detail, but I will briefly discuss a few of the problems in connection with the more frequent complications.

Otitis media, as stated before, is certainly one of the most frequent complications that one has to deal with. The time-honored phenol and glycerine mixture is often very potent for the relief of pain but it has the disadvantage if used very often of causing some desquamation of the canal which may lead to a troublesome furunculosis later on. Equal parts of 6 per cent cocaine solution, adrenalin solution and camphor water is perhaps still more potent in relieving the pain and does not cause any irritation to the canal wall. The drops should be warm, and dropped into the ear every two, three or four hours if pain is troublesome. If these measures fail and the process goes on to abscess formation with bulging of the drum membrane, incision of the membrane is indicated. Better drainage is obtained than when the drum is allowed to rupture spontaneously, there is immediate relief of pain, and the temperature is usually promptly reduced.

Adenitis is a frequent problem in these cases and always greatly prolongs the febrile period to weeks or even months. Ultra-violet treat-

ments may prove of great value in some of these cases, while topical applications are probably of little or no value. General supportive measures with special reference to proper feeding are important considerations when this complication arises.

Laryngitis is undoubtedly one of the frequent complications, but does not often give troublesome symptoms; however, when it does actively assert itself in a definitely croupous fashion, there is probably no other complication encountered that presents a more formidable picture. The condition is often very hard and at times impossible to differentiate from a diphtheritic process. The latter condition, however, usually develops more gradually and there is an early loss of voice in the majority of cases in diphtheritic laryngitis, whereas, in the simple catarrhal laryngitis, the symptams usually develop less gradually and the voice is metallic and hoarse but rarely lost. This is an important differential point.

Perhaps the most valuable remedial agent is steam inhalation. One teaspoonful of compound tincture of benzoin and one-half of a teaspoonful of creosote to a pint of water makes a very satisfactory solution for this purpose. The administration of ipecac or antipyrine or both is of great benefit in these cases. They both have a sedative effect and apparently tend to relax the mucous membranes. In rare cases all of these measures may fail and intubation or tracheotomy may have to be resorted to.

I shall not go into the details of such complications as bronchitis and pneumonia for obvious reasons.

I am presenting this somewhat rambling discussion of this very important subject with a full realization of the fact that I am probably not presenting a single new thought. And my only excuse for offering this paper is the hope that it may stimulate some further thoughtful consideration of these very prevalent and troublesome infections.

Medical Arts Building.

A STUDY OF CONGENITAL SYPHILIS.*

By J. M. BISHOP, M. D., Roanoke, Va.

Paracelsus, in 1529, was probably the first to mention transmission of syphilis from parent to child, although there is considerable disagreement on this point. From this time until the beginning of the 20th century there were many valuable contributions to the subject. In 1904, Wassermann described the complement fixation test. In 1905, Schaudinn and Hoffman discovered the spirochete pallida as the causative organism, and in 1910 Ehrlich announced the discovery of salvarsan, "606." These discoveries are the three outstanding and important contributions relative to syphilis.

Congenital syphilis is so called when contracted by the fetus during intra-uterine life. It is difficult to find a satisfactory classification, but, for purpose of study, it is at least convenient to divide congenital syphilis into four groups:

I. Fetal—Lesions present at birth.

II. Infantile — Lesions appearing after birth but during infancy.

III. Late—Lesions appearing after infancy.

IV. Latent—A long period without manifestations, or cases accidentally discovered by routine Wassermann reaction, etc.

(The term "latent" is used in this article to indicate absence of clinical manifestations.)

Studies concerning incidence necessarily vary. The incidence is obviously much higher when including cases diagnosed only by a positive Wassermann. An examination of the routine Wassermann and Kahn reports of patients admitted to this hospital from January 1, 1929, to November 15, 1929, show 5.1 per cent positive reactions. Sixty-three per cent of this group were Negroes. Forty and seven-tenths per cent had no apparent syphilitic manifestations.

The following figures are taken from Abt's Pediatrics.[1] Jeans studies of over 5,000 pregnant women in hospitals of different cities showed slightly less than 10 per cent syphilitic. Eight hundred and fifty-four infants admitted to a St. Louis hospital gave an incidence of 4.9 per cent. Two thousand maternity cases in St. Louis, studied by Jeans and Cooke, on fetal and placental blood, among Negroes, gave 15 per cent positive reactions. Poorer whites gave 2 per cent, and the better class of whites less than 1 per cent. One per cent of apparently non-syphilitic babies gave a positive Wassermann reactions. Wirtz reported 3 per cent positive Wassermanns in apparently non-syphilitic school children in Munich. Thirty per cent of marriages in which either partner is syphilitic are sterile. A large num-

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ber of the remaining 70 per cent produce many fetal misfortunes, and early infant deaths, leaving a relatively small number of syphilitics that pass infancy, i. e., 50 per cent of pregnancies in syphilitic families result in fetal or infant deaths, 18 per cent healthy children, and 30 to 40 per cent living syphilitic children.

Transmission, according to present day opinions, is always from the mother, and the only role of the father is to infect the mother. Colle's Law, that "A healthy mother cannot become infected from nursing her syphilitic child," is now explained by a latent syphilis of the mother. Law, of Prefeta, "A child known to be healthy, born of a syphilitic mother, cannot contract syphilis by nursing nor any other contact." This immunity does not extend throughout life. This is explained by probable latent syphilis in the child, or decreased virulence, as mentioned later.

Cannon[2] reports the following observations from 202 cases. In 80 per cent of the mothers it was impossible to determine the exact date of infection. The approximate time was determined in 168. In 158 cases the mother had not been treated. Only twenty were treated during pregnancy. Sixty cases represented the first pregnancy; forty-one, the second; thirty-five, the third; and decreasing to the thirteenth. The period of infection in the mother prior to the birth of a syphilitic child varied from five months to fourteen years. One hundred and four had been infected less than five years and sixty-four for a longer period. Healthy and syphilitic infants may alternate. Four sets of twins in different families showed one syphilitic, the other apparently healthy with persistent negative Wassermann. The ages varied from seven months to seventeen years. Dennie[3] reports five sets of twins, both syphilitic, and one pair of identical twins, one syphilitic and the other normal.

It is generally believed that the first pregnancies of the syphilitic mother result in miscarriages, still-births, or early fetal deaths, and later healthy children are born, the mother receiving no treatment. Casselman[4] states that the body sets up a protective mechanism which interferes with reproduction of the spirochetes, and usually in five years renders the patient non-infectious, even to relationship of mother and fetus, and on this basis explains the remote chance of transmission to the third generation. Observers disagree on this question. Bondurant[5] reports a case of syphilis in the third generation, and states that there are no cases reported beyond the third generation.

The Wassermann and precipitation tests for syphilis are a reliable method of diagnosis of congenital syphilis, especially when the two tests are used. There is no other form of syphilitic infection which gives a higher percentage of positive reactions[1] or in which the reaction is of more value from a standpoint of diagnosis. One hundred per cent of a series of syphilitic infants gave a positive reaction after two months of age. Cannon[2] reported 190 strongly positive Wassermanns, partial reaction in eight, and negative reaction in two.

The Wassermann may be negative during the first few weeks in an infant with congenital syphilis, but later become positive. It is also generally accepted that the Wassermann of a healthy infant of syphilitic parents may be weakly positive for the first few weeks[8] and later become negative. This is explained by the mother's blood transmitting this faculty to the infant's blood, which soon disappears. Numerous conditions and diseases have been associated with false positive reactions. These include scarlet fever, tuberculosis, nephritis, malaria, pregnancy and others. Kolmer[6] believes that a positive Wassermann may occur in these conditions, but means that the patient is also syphilitic. The report is based on a large number of cases using Kolmer's modification. He states that pregnancy may stimulate or provoke latent syphilis into activity just as trauma, intercurrent disease or the administration of arsphenamine may prove provocative, so that unexpected positive reactions may occur. Stillians,[7] using this same method, states that fifty-two clinically syphilitic pregnant women showed positive Wassermanns, and after delivery only forty-one were positive.

The early manifestations may be abortion, still-birth, or almost any type of lesion may occur in any tissue at birth or soon afterwards.

Cannon[2] observes that the rash resembles that of acquired syphilis, but is often too scanty to be recognized. Fifty-one of the 202 cases reported showed or gave a history of secondary lesions, snuffles, emaciation, epiphysitis or meningitis between the ages of three weeks and six months. Sylvester[8] summarizes the early lesions: Copper or salmon colored lesions of the skin should arouse suspicion. Small pustules with a narrow red margin on the fingers, toes, palms and soles are almost

pathognomonic. The "doughnut" lesion, slightly raised with a clear center, occurring on flexor surfaces, is absolutely diagnostic, as is the "fussy" exudate at the inner third of the eyebrows, resembling in texture but lighter in color than seborrheic eczema. "Snuffles" lasting several weeks, fine radiating lines about the mouth and genitals, the moist, wart-like condylomata at the nostrils, corners of the mouth, folds of the vulva and anus, are diagnostic. Mucous patches are seldom seen, but appear occasionally as milky plaques at the junctions of the hard and soft palate. The liver and spleen are consistently enlarged, which is strongly suggestive in any young infant. There may be swelling tenderness, etc., of the joints, and bone changes detected by the X-ray, most often the lower end of the radius and upper end of the tibia. Syphilitic infants have large tonsils, and are more susceptible to colds, etc., but otitis media is non-syphilitic in origin. Most syphilitic infants are underweight and look old and "skinny." An infant that sleeps all day and cries all night, or an underweight infant with waxy skin and a grayish, lead-colored pallor, also suggests syphilis. Griffith and Mitchell[9] state that lesions may be present at birth, but the largest percentage appear healthy at birth with symptoms appearing later. The earliest symptoms are a persisten coryza, followed by a hoarse, high-pitched persistent crying, especially at night. Soon cutaneous manifestations appear, often accompanied by slight fever; then evidence of osseous lesions, apparent paralysis following. Debility and wasting begin early and advance with the disease. Mild cases may show no nutritional disturbance. An osteochrondritis is frequent, but often not clinically manifest at birth. It appears as a tender swelling at the junction of the shaft and epiphysis. Dactylitis of the proximal phalanx, usually of the fingers and bilateral, may occur early. Craniotabes is often present but not diagnostic.

According to Macleod,[10] the cutaneous eruption is the most characteristic sign. It consists of macules and papules of varying size, first pinkish, later reddish-brown or copper colored, chiefly on the forehead, buttocks, palms and soles, and may be on the body and extremities. The nails may become shrivelled, furrowed and brittle. Alopecia may be evident over the vertex and occiput, and even eyebrows and eye-lashes. Frontal bosses and nodes on the outer plate of the skull (Parrot's node) are not uncommon.

Syphilis is a frequent cause of moderate hydrocephalus during the first year, following a chronic syphilitic meningitis.

The later manifestations vary, as do the early ones. The late lesions[8] show a slightly different preference for tissues. Lesions of the skin are rare. The "cold sore," lasting for a long period, is suggestive. A variety of bone changes may occur, as destructive lesions with possibility of a sinus resulting, osteoporosis most often of the occipital region of the skull, saddle nose, etc., or hypertrophic lesions of the bones as frontal and parietal bosses, and saber shins. Sylvester[8] considers adenopathy of little or no value unless the epitrochlears alone are enlarged.

Cannon makes the following report on his study of 202 cases:

Age, three weeks to forty-four years. The average age at which the patient sought treatment on account of symptoms was from ten to fifteen years.

Sixty-four had wedge-shaped anterior incisor teeth.

Forty-five had tubercles of Carabelli (a small tubercle on the lingual surface of the molar teeth).

Thirty-three had mulberry molars.

Twenty-five had delayed dentition.

Twenty-one had Hutchinson teeth.

Seventy-four had high palate arch.

Forty-one had thin irregular hair.

Twenty-five had asymmetry of face and prominent bosses.

Nineteen had pupillary and deep reflex changes.

Fifteen had saber shins.

Eight had deafness.

Five had malocclusion of teeth.

Four had saddle nose.

Four had hydrocephalus.

Seventy cases sought medical advice due to symptoms of interstitial keratitis.

The teeth may show many variations, from irregularity, widely spaced, pointed, notched, and other variations, as, the mulberry molar, and tubercle of Carabelli, but these findings pertain to the permanent teeth and are of no value in the young child. Also, any severe illness or nutritional disturbance during the first year of life may cause these changes in non-syphilitic children.

Reports on the incidence of cerebro-spinal

syphilis in congenital syphilitic children are very interesting, and stress the importance of more frequent lumbar punctures for diagnostic purposes. A positive spinal fluid Wassermann is regarded as evidence of cerebro-spinal involvement. Again, referring to Cannon's[2] report, only 17 per cent were below par mentally. Eleven and two-tenths per cent males gave a positive spinal fluid Wassermann and only 10 per cent of the females. Jeans reported central nervous involvement in 32.7 per cent of a series.

Abt[11] mentions endarteritis, meningitis, hydrocephalus, encephalitis, gummata, sclerosis, cerebral and meningeal hemorrhage as the principal lesions, and states that cerebral hemorrhage is rare in the older child, but more common in the newborn. Schaeffer[12] believes that congenital syphilis is often the unrecognized cause of the so-called spontaneous meningeal hemorrhages, and occurs most often in the female, and seems to be associated with menstruation.

A discussion of treatment should include prophylactic, i. e., discovering and treating all syphilitics before conception, or at least treating the mother during pregnancy. A mother treated adequately throughout pregnancy will deliver a baby free from syphilis. Five or six months treatment may be sufficient but leaves room for doubt, and often results in considerable embarrassment. Klaften[13] outlines the treatment as follows: Antenatal, treatment of the mother, postnatal, treatment of the newborn infant. He further divides the latter into early and late. Next to adequate treatment of the mother, the early treatment of the infant, before manifestations, is to be desired. Much less treatment is required, and this minimal treatment should be given when there is any doubt. Casselman[4] suggests a minimum of two years treatment of cases diagnosed after birth, and adds a year after the Wassermann becomes negative. The longer the child goes untreated, the longer period of treatment will be required. He gives three weekly doses of sulpharsphenamine, two weekly of bismuth, and two weeks rest, and repeats this cycle. He also uses iodides for the first half of each month. He considers bismuth more efficacious than mercury.

Sylvester[8] considers arsphenamine unsuitable for children, neoarsphenamine, 10 to 20 mgm. per kilo, the most efficacious, but attended with dangers. Sulpharsphenamine in doses 20 to 40 mgm. per kilo is very successful. The neoarsphenamine is given intravenously, as the muscular injection causes considerable pain. Sulpharsphenamine may be given intramuscularly without marked pain, or tenderness resulting. He gives the following contraindications to arsenic administration: 1. Grave malnutrition from any cause; 2. Any severe infection, particularly pneumonia or severe bronchitis; 3. High fever from any cause; 4. Acute meningeal symptoms; 5. Nephritis. Jaundice should be added even though very mild. Cases with keratitis and neurosyphilis offer very difficult problems.

Von den Steinen[14] considers spirozid (German) or stovarsol (French) given by mouth, equal to neoarsphenamine and is using this exclusively, reporting excellent results. Danzer[15] has the same opinion, and is using spirozid exclusively with good results.

The important factors of successful treatment are: 1. Conservatism; 2. Persistency; 3. Rotation. The present trend is toward smaller doses of arsenicals, and more prolonged treatment. The most satisfactory results are obtained by rotation of drugs, including arsenicals, bismuth, mercury and iodides. Mercurial inunctions are convenient and efficient. Sulpharsphenamine gives good results and is the most commonly used arsenical, especially during infancy. The urine must be examined frequently for pus, albumin, and casts during the treatment with mercury or bismuth. Treatment must be cautiously started in marked malnourished or dystrophic infants.

Erdman[16] reported several cases that bismuth remained unabsorbed from eighty-five to 435 days. Boyd,[17] in answer to this, showed that the same preparations, with proper precautions and after-treatment, were absorbed.

Nobecourt and Lebee[18] report interesting observations on convulsions associated with congenital syphilis, and find that syphilis was twice as common in children having convulsions as the general average of syphilis in other children.

The prognosis depends on the severity of the infection, age, onset and treatment. Klaften[13] states that early diagnosis and treatment reduce the mortality from 56 per cent to 15.7 per cent. Infants showing evidence of syphilis at birth have little chance of surviving. Sylvester[8] summarizes as follows: Of the untreated or insufficiently treated syphilitic infants, one year old, 50 per cent have died, 45

per cent are maimed, and only 5 per cent give promise of reasonable physical or mental development. Cases that remain untreated until later childhood, puberty or longer, can rarely be cured, but with proper treatment may lead a happy, useful life. Syphilitic nephritis appears to be most often fatal. Cannon[2] had fourteen cases diagnosed during life, and all reached the autopsy table.

Of the cases studied in this hospital, 40.7 per cent of the total died. Fifty-one per cent had manifestations before two months of age. The mortality in this group was 78 per cent. This study forcibly reminds us of the high mortality and morbidity associated with this prevalent disease. The record above mentioned does not represent the average, as all mild cases were treated in the Out-Patient Department, and are not included.

Bibliography

1. Veeder and Jeans: Abt's Pediatrics, V. 5.
2. Cannon, A B: A Study of 202 Cases of Congenital Syphilis, *J. A. M. A.*, V. 89, p. 666, August 27, 1927.
3. Dennie, C. C.: Heredosyphilitic Twins, M. Clin N. Amer., 7:1219, January, 1924.
4. Casselman, A. J.: Congenital Syphilis: Practical Methods, Prevention, Diagnosis, and Treatment, *J. Med. Soc. N. J.*, 25:623-632. October, 1928.
5. Bondurant, C. P.: Syphilis to the Third Generation, *Arch. D. and S.*, 15:695-702. June, 1927.
6. Kolmer, J. A.: Serum Diagnosis of Syphilis, *J. A. M. A.*, V. 93, No. 19, p. 1429, November 9, 1929.
7. Stillians, A. W.: Reliability of Kolmer-Wassermann Reaction in Pregnancy. *Arch. Der. and Syph.*, 17:318. March, 1928.
8. Sylvester, P. H: Observations on Congenital Syphilis, *Boston M. and S. Jour.*, V. 193, p. 393, August, 1927.
9. Griffith and Mitchell: The Diseases of Infants and Children. 2nd Edit., V. 1, Ch. XXII
10. Macleod: Diseases of the Skin. Ch. XIX, p. 594.
11. Abt, I. A.: Syphilis of the C. N S. in Infancy and Childhood, *Jour. Ark. Med. Soc.*, 25:213-219, May, 1929.
12. Schaeffer, H.: The Role of Hereditary Syphilis in the Etiology of Spontaneous Subarachnoid Meningeal Hemorrhages, *La Presse Medicale*, 35:628-630, May 18, 1927.
13. Klaften, E: The Principles of Antisyphilitic Treatment of Newly Born Infants, *Klinische Wochenschrift*, 7:458-462, March 4, 1928.
14. Von den Steinen, R.: Treatment of Infantile Lues with "Spirozid," *Munchener Medizinische Wochenschrift*, 74:1006-1007. June 17, 1927.
15. Danzer, Margarite: Treatment of Infantile Lues With "Spirozid," *Medizinische Klinik.*, 25:152-153, January 25, 1929.
16. Erdman, B.: Is Bismuth Absorbed? *J. A. M. A.*. V. 92, April 13, 1929.
17. Boyd, M. L.: Bismuth Is Absorbed, *J. A. M. A.*, V. 93, July 27, 1929.
18. Nobecourt, P., and Lebee, L.: Convulsions of Early Infancy and Congenital Syphilis, *Bulletine de la Societe de Pediatrie de Paris*, 26: 24-29, January, 1928.

511 *Medical Arts Building.*

AGRANULOCYTIC ANGINA—CASE REPORT WITH AUTOPSY FINDINGS.

By J. KIRK RICHARDSON, M. D., Richmond, Va.

Within the past few years a small series of cases of agranulocytic angina have appeared in the literature and have stimulated widespread interest in a condition which has been considered as unusual as it is serious. The writer submits the following addition to this series:

Case Report

Mrs. L. M. S., aged 30, white, was first seen at her home on June 17, 1930, about midnight. She was suffering with sore throat, headache and general malaise. She gave a history of having had a curettement for an incomplete abortion about four weeks previously. One week following this operation, she developed sore throat with fever and slight nausea. This condition cleared up completely in a few days and continued so until the present time.

Examination now disclosed temperature of 101 degrees, pulse 95, and rather marked stomatitis and pharyngitis; otherwise, the findings were negative. She was again seen on the afternoon of June 18th, at which time the stomatitis and pharyngitis were more marked and there was a slight enlargement of the anterior cervical lymph glands. A blood count made that evening showed a total of about 1,200 white cells, with no polynuclears after a search of several slides. The patient was taken to Stuart Circle Hospital on the morning of June 19th, and another blood count, made immediately upon admittance, showed 4,201,000 red cells, haemoglobin 71 per cent, white cells 650, prepolys 3, polynuclears none, lymphocytes 95, endothelial lymphocytes 2. A smear from the throat exhibited staphylococci, a rare Vincent and fusiform organism and a rare streptococcic chain. A throat culture later showed the bacillus pyocyaneus predominant. The urine contained a slight trace of albumen and a few pus cells. The temperature on admittance to the hospital was 103°, pulse 98, respiration 20, blood pressure—98 systolic, 60 diastolic. The mouth now had a pronounced

membrane which came off easily without bleeding, and the anterior cervical lymph glands were slightly more enlarged and tender.

An X-ray exposure was given by Dr. Fred M. Hodges to the pelvis and knees for five minutes, and another blood count made late that evening indicated a slight improvement in the total leucocytes and polynuclears. The patient's temperature ranged from 101° to 105° during her illness. The blood picture was studied each morning and evening and the results are given in the following table:

	X-Ray Treatment		X-Ray Treatment		X-Ray Treatment				
	AM 6–19	PM 6–19	AM 6–20	PM 6–20	AM 6–21	PM 6–21	AM 6–22	PM 6–22	AM 6–23
White	650	888	633	889	500	553	475	775	3,180
Pre-Polys	3	8	9	6	1	6	6	8	2
Polys	—	—	8	1	—	—	—	—	—
Lymphs	95	84	83	80	86	84	80	84	92
Endoth. L	2	2	—	—	2	—	10	—	2
N. Myel	—	2	11	7	—	—	—	4	—
Unclassified	—	—	2	2	8	4	4	4	—

X-ray exposure was given on June 20th for five minutes to the feet and head, and on the 21st for ten minutes to the back. The blood count, as shown in the table, remained about the same, and Dr. Hodges thought it unnecessary to continue X-ray therapy. On the 21st ten cubic centimeters of leucocytic extract was administered subcutaneously, and five cubic centimeters of sterile milk was injected intramuscularly a few hours later. The leucocytic extract was repeated on the 22nd and 23rd. None of these remedies influenced the blood picture to any extent. The patient steadily grew worse and died on the morning of June 23rd. A partial autopsy was permitted, and was done by Drs. Beck and Fitzgerald. Their report, omitting negative findings, is as follows:

"Arteries of small bowel showed a moderate congestion. In the ileum was found at five different areas marked hemorrhagic condition of the serosa. On opening the bowel these were found to be small simple ulcers of about 2 mm. in diameter, with the hemorrhagic area 1 cm. surrounding them. Liver slightly enlarged and congested with slight amount of cloudy swelling. Spleen showed a moderate fibrosis. Kidneys showed a moderate amount of cloudy swelling, involving about one-third of the kidney parenchyma; moderate hemorrhage into the interstitial substance; glomeruli normal. Right tube showed a chronic salpingitis; tube markedly congested. Ovary enlarged and contained hemorrhagic and simple cysts. Left tube congested as above. Bone marrow was bright red; in probing it to remove a portion for culture the fat was found to be very pale in appearance and in a fluid condition. It seemed to consist of red trabeculae of bone and fluid fat. Microscopically the haematopoietic tissue showed normoblasts and gigantoblasts, also megakaryocytes. An occasional cell resembling a myeloblast was found, but they showed so much fatty infiltration (or degeneration) it was impossible to definitely classify them. A culture of the bone marrow gave a pure culture of pyocyaneus."

Comment: The essential elements of the clinical picture of agranulocytic angina are present in this case,—fever, sore throat, prostration, and especially the singular blood count, which is typical. The autopsy findings are confirmatory,—absence in the bone marrow of the myeloblasts, the parent cells of the polynuclear leucocytes. With our present knowledge of the condition the only treatment that offers any hope, and this quite uncertain, is X-ray stimulation of the bone marrow. In the case under review this treatment was of no benefit.

2019 *Monument Avenue.*

Miscellaneous

Clinical Pathological Conference of the Senior and Junior Classes, Medical College of Virginia.

Patient is a colored male, aged 18 years, admitted to the hospital September 10, 1931, complaining of abdominal pain.

Patient states that twelve days ago he was

taken sick with pain in abdomen, continuous in character, at first localized around umbilicus, but has since become generalized. Patient is constipated, has eaten very little and has been confined to bed since onset of present illness. No history of nausea nor vomiting. History of headache of a week's duration at onset of present illness. Detailed history is impossible due to mental condition of patient.

P. H. is essentially negative.

Physical Examination negative except for the following physical phenomena:

Marked pallor of mucous membranes. Tachycardia 100/min. B. P. 90/0.

Abdomen: Movement restricted throughout, most marked in lower quadrant. Moderate tenderness of abdomen on light pressure, considerable spasticity of abdominal musculature. Unable to palpate any viscera due to rigidity of abdominal muscles.

Rectal examination: Reveals a probable mass on the right side, considerable tenderness and free blood in lumen of the bowel.

Laboratory data: Widal positive 1-320. Positive Blood Culture for B. typhosus.

Urinalysis: Straw color, cloudy, alkaline in reaction, Sp. Gr. 1.012, albumen very slight trace, sugar, acetone, diacetic acid and bile negative. Sediment: many phosphate crystals and rare leucocyte.

Blood: Hemoglobin 40 per cent; R. B. C. 1,960,000; W. B. C. 14,500; 89 per cent lymphocytes; 6 per cent polymorphonuclear leucocytes, 5 per cent myelocytes. Smear: slight polychromatophilia and rare stippled cells.

Temperature on admission was 102.2 degrees, pulse 100, respiration 25. Four hours later temperature was 99.2 degrees, pulse 135, respiration 35. Following day temperature was 104 degrees, pulse 160, respiration 28. September 12th at 8 A. M. temperature was 101.8 degrees, pulse 154, respiration 35. Patient died at 8:20 A. M.

Therapy: Saline and glucose via hypoclysis and venoclysis.

Clinical Discussion of Case by Dr. William B. Porter

At the time of entering the hospital this patient presented the aspects of an extremely ill individual and was markedly prostrated. During the course of his illness obstinate constipation has been an outstanding symptom. He complained chiefly of abdominal pain which, according to the history, ushered in his illness, was continuous in character, was localized at first around the umbilicus, and later becoming generalized.

From the standpoint of physical diagnosis the following physical phenomena are to be analyzed:

The patient is extremely ill and prostrated; very pale; sweating; B. P. 90/0; obviously in severe shock, probably incident to massive recent hemorrhage. The low diastolic pressure and wide pulse pressure are significant, being found chiefly in severe shock, aortic regurgitation and exophthalmic goitre. The abdomen was tympanitic, not strikingly distended, but was definitely fixed. The recti muscles, if I recall correctly, stood out quite prominently. His abdomen was universally tender and markedly rigid, suggesting intense peritoneal irritation. Examination of the rectum was of extreme importance. One of the most interesting statements made by Sir William Osler was: "About the only excuse for consulting a specialist was to have him examine the rectum and test for sensation." The rectal examination in this case reveals marked generalized tenderness and free blood in lumen of bowel, which suggested pelvic peritonitis and a bleeding point, an ulcer, most likely in the lower bowel. The urinalysis is essentially negative except for the low specific gravity.

The blood study reveals a rather marked secondary anemia, and a definite leucocytosis, which could be explained by hemorrhage and perforation. The bleeding point in this case is most likely in the Peyer's patches, the seat of the intestinal lesions of typhoid fever. Perforated peptic ulcer is not a probable diagnosis in this case because of the absence of previous digestive symptoms and the age of the patient is against such a diagnosis. The patient probably had a leucopenia at the beginning of his illness. The leucocytosis represents the response to the secondary infection, peritonitis.

The primary diagnosis is typhoid fever, complicated by hemorrhage and perforation. The secondary disease is peritonitis.

Autopsy Report and Discussion by Dr. Lewis C. Pusch

I should like to diverge, if I may, from the usual procedure of these meetings in the past,

and, instead of promptly giving my conclusion regarding the nature of this case from the observations made at autopsy, to describe the structural features and then ask you if you still agree with the diagnosis made from the manifestations of these features.

Autopsy Report: Gross Description: Body length 174 cm. Estimated weight 60 kg. Moderately marked emaciation. Leukodermic patches, a few millimeters in diameter, were present on both shoulders. Mucous membranes were pale. Abdomen not distended. Rigor mortis present.

The autopsy was limited to the abdomen. Gas escaped on opening peritoneal cavity. About two liters of seropurulent exudate was present in the peritoneal cavity with peritoneal surfaces diffusely covered with a fibrinopurulent exudate. The stomach was slightly distended, chiefly with gas, the jejunum was moderately distended, while the ileum and large intestine were collapsed. There were a few small areas of hemorrhage in the gastric mucosa. Duodenal and jejunal mucosae were grossly normal. The terminal 50 cm. of the ileum embraced many ragged non-indurated ulcers with hemorrhagic border, 1 to 3 cm. in diameter. There was no constant conformity of axes of ulcers to axis of lumen of intestine. Two of the ulcers had perforated through the peritoneal surface, with fecal material and necrotic debris occupying the openings. Margins and bases of ulcers were soft, necrotic and partly hemorrhagic. A small amount of blood was present in the colon. Colonic mucosa was grossly normal. Mesenteric lymph glands were diffusely enlarged, those draining the terminal ileum were markedly enlarged; a few were hemorrhagic. The spleen weighed 175 gms. It was soft in consistency with a reddish-brown pulp in which Malpighian bodies were barely discernible. An accessory spleen, 1.2 cm. in diameter, was present in the gastrolienal ligament.

The liver weighed 1375 gms. Capsular surface was smooth, yellowish-brown in color with foci of pale yellow. Subcapsular hemorrhagic extravasation was present at the convexity of the right lobe. Cut surface revealed a moderately friable structure, pale yellow and yellowish-brown in color. A wedge-shaped grayish-yellow area, approximately 1 cm. in diameter, resembling an anemic infarct, occurred on the anterior margin. The gall-bladder had a slightly oedematous wall, but otherwise was grossly normal. Bile ducts, portal vein and pancreas were grossly normal. The adrenal glands were unusually thin with dull grayish-yellow cortices.

Kidneys, approximately of equal size, had a combined weight of 300 gms. They were moderately hyperemic, with a vascular congestion of pelvic mucosa. The cut surface was dull grayish-pink in color with ill defined striations. Ureters, bladder, prostate and testes, grossly normal.

Discussion: Now that you are acquainted with the autopsy findings, do you adhere to the diagnosis of typhoid fever? Are the lesions as described characteristic of this disease? Are they pathognomonic of it?

It is true that the most frequent location of the ulcers of typhoid fever is in the terminal ileum. But ulcers of what other disease processes may occur there? (Student, answering: "Tuberculosis.") Yes, tuberculosis. But does the character of the ulcers in the case under consideration conform with that of tuberculosis? Tuberculous ulcers usually have indurated margins and bases, with the peritoneal aspect studded with tubercles radiating away from the ulcer along lymphatic channels. In our case the margins of the ulcers were soft and necrotic with the peritoneal surface devoid of radiating nodules. But there was no conformity between the axes of the ulcers and the axis of the intestinal lumen in our case. Classically, typhoid ulcers have been described as having an axis conforming with the axis of the intestinal lumen, since they arise in Peyer's patches, while tuberculous ulcers are said to be girdle ulcers. If either disposition predominates in the present case it is that with the long axis at right angles to the lumen. Perforation is unusual in tuberculosis.

How would you differentiate this case from bacillary dysentery? Ulcers occur in this disease, although not as initial changes. They are irregular in outline and tend to be confluent, rarely discrete. The predominant feature in bacillary dysentery is the formation of a hemorrhagic diphtheritic membrane, involving chiefly the colon, with ulceration arising from sloughing of the membrane. Perforation is rare.

In amoebic dysentery, also, the colon is the common site of the intestinal lesions. Inflammatory response is lacking and ragged masses

of undermined necrotic mucosa partly cover irregular communicating ulcers with yellowish white necrotic bases. The ulcers rarely perforate.

From the location and character of the ulcers, associated with multiple perforations, and from the character of the remainder of the abdominal viscera, there is little doubt that we are dealing with a case of typhoid fever. Moreover, the Widal and blood culture were positive, and typhoid bacilli were cultivated from the peritoneal exudate obtained at autopsy. It is well to note that not all cases of typhoid fever conform to the classical differentiation from tuberculosis on the basis of direction of axes of intestinal ulcers.

The cause of death in this case is generalized seropurulent and fibrinopurulent peritonitis secondary to perforations of typhoid ulcers of the ileum. The small amount of blood present in the intestines at autopsy scarcely supports hemorrhage as an immediate cause of death.

Further Discussion by Dr. Porter

Our conception of this case was correct. My impression is that the laboratory evidence—hemoglobin 40 per cent, R. B. C. 1,960,000—is definite proof that bleeding was an important element in this patient. Anemia is not a prominent feature of uncomplicated typhoid fever. My impression is that operation would have been of no benefit, for general peritonitis was already present when the patient was admitted to the wards.

Statistical Facts on Typhoid Fever at the Medical College of Virginia Hospital Division

During the past five years 8,795 patients have been admitted to the medical service of the Hospital Division of the Medical College of Virginia. The diagnosis of typhoid fever was made on ninety-one of these patients. Fourteen of the cases clinically were typhoid fever, but were serologically and bacteriologically negative for typhoid fever. Seventy-seven of the cases either had positive Widal or blood cultures. Nine of the patients died. Autopsies were performed on five of them. The pathologist's reports are as follows:

Case 1. Primary disease typhoid fever with perforation. Secondary disease generalized peritonitis.

Case 2. Primary disease typhoid fever. Secondary disease bronchitis and bronchopneumonia.

Case 3. Primary disease typhoid fever complicated by hemorrhage and perforation. Secondary disease generalized seropurulent and fibrinopurulent peritonitis.

Case 4. Autopsy limited to kidney and liver. Pathologic diagnosis: Septicemia and toxemia. Acute diffuse nephritis.

Positive Widals and blood cultures were obtained on this patient.

Percentages of deaths: 11.68 per cent death rate in proven typhoid cases in this series; 9.89 per cent death rate, including the fourteen clinical typhoid cases in this series.

Woman's Auxiliary, to the Medical Society of Va.

President—*Mrs. J. Allison Hodges*, 5511 Cary Street Road, Richmond.
President-Elect—*Mrs. M. N. King*, 1314 Westover Avenue, Norfolk.
Secretary—*Mrs. James K. Hall*, 3011 Seminary Avenue, Richmond.
Treasurer—*Mrs. Wm. Branch Porter*, 5125 Cary Street Road, Richmond.

Echoes From the Convention.

The meeting of the Medical Society of Virginia. which closed its Sixty-Second Annual Session on October 8, 1931, will be recorded as one of, if not the largest and most successful in its history. Approximately, six hundred doctors and their wives attended. We believe the ladies added enthusiasm and interest to the occasion. There were eighty-two visiting and sixty-two local ladies registered; business sessions were held both mornings. In addition to the fine reports given by the Women's Auxiliaries, we had most interesting and illuminating addresses given by Dr. W. F. Draper, the new Health Commissioner of Virginia; Dr. Greer Baughman, upon Pre-Natal Care; Dr. Louis Brand, upon the condition of women and children in Korea. Miss Ellen Smith, who has given invaluable service to the Public Health Department in her work for the pre-school examinations and Child Health Day, made a most interesting address. She explained the purpose of the Health Cards, and illustrated her talk with a large Chart, showing the conditions in every County in Virginia. She distributed the cards, and asked for

the earnest assistance of the Auxiliaries in this most important work.

The high-lights of the meeting were the addresses of our honor guests, Mrs. George Hendon, President of the Women's Auxiliary to the Medical Society of Kentucky, and Mrs. Arthur McCormack, Past-President of the Auxiliary of the Southern Medical. They brought us most inspiring messages, which I hope will stimulate us to greater efforts. Kentucky has twenty-two Counties organized, and Virginia only four, I regret to say. We must make a better record this year. One of the most remarkable reports made was that of Mrs. Mountcastle, who is not in any way connected with the Medical Profession, of the work that she started a few years ago in the examinations of school children in Roanoke. Hundreds of children through her earnest efforts have been treated and cured. All who heard her must have realized that this is a vital and definite work and one which the Auxiliaries can undertake at once. To have healthy citizens, we must start with the children, in this strenuous age. We need a hundred per cent efficiency.

Mrs. E. H. Ould, President of the Women's Club, told of their health work and pledged the support of her organization.

Mrs. Hodges expressed the hope that other Women's Clubs throughout the State would help in the promotion of health.

Mrs. W. F. Drewry, of Richmond, led the discussion upon Public Relations. There are many cults, fads and semi-medical treatments in evidence today, and we must beware of them, and rally to the support of scientific medicine.

The work to which the Auxiliary will give special attention, this year, will be along the lines of pre-natal and post-natal education and pre-school examinations for children.

Always we are endeavoring to increase the number of Auxiliaries in Virginia and to enlarge their scope of work.

We are glad the Auxiliary was officially recognized by the Medical Society, as part of its activities, when the President was asked to report with the other Committees. The President, Dr. J. Allison Hodges, President-Elect, Dr. I. C. Harrison, and two of our Advisory Committee, Dr. Southgate Leigh and Dr. J. W. Preston, brought us messages of encouragement and appreciation.

The Local Committee, under the able leadership of the Chairman, Mrs. J. O. Boyd, seemed to have anticipated every wish and everything was done for our pleasure and comfort. The entertainments were unusual and varied. A delightful luncheon at the Country Club, a trip to the Natural Bridge, followed by a lovely tea at the historic old Forest Tavern and a gorgeous ball and cabaret was the climax of the convention.

I wish to express the very sincere appreciation of the Auxiliary, as well as my personal thanks, for the lavish hospitality and many courtesies of our hostesses.

The Roanoke Convention is over, but our visit to your "Magic City" will be a golden memory to carry through the years.

Mary Gray Hodges,
(Mrs. J. Allison Hodges).

The following notice taken from the *Roanoke (Va.) Times*, for October 9th, gives an idea of the lovely entertainments enjoyed by the ladies:

Visitors Entertained

A delightful and well attended luncheon was given at the Country Club on Wednesday for the wives of the local and visiting members of the State Medical Association. About forty tables were arranged in the spacious living and dining rooms, each table being arranged with a centerpiece of pink roses and individual pink-rose nut baskets.

Mrs. W. W. S. Butler, Jr., presided at the luncheon, as she has done throughout the convention in the absence of the general chairman, Mrs. J. O. Boyd, owing to her illness. A toast and welcome to the visitors was given by Mrs. Harry B. Stone, who also presented a lovely corsage bouquet to Mrs. J. Allison Hodges, of Richmond, president of the Woman's Auxiliary of the association. Mrs. Hodges graciously responded in behalf of the visitors. During the luncheon a delightful musical program was rendered by Mrs. E. Lee Trinkle, violin, accompanied by Mrs. George Lawson, and Mrs. George Hurt, soprano, accompanied by Mrs. M. R. Faville.

At the conclusion of the luncheon, tables were arranged for contract and auction bridge, handsome prizes being awarded in both games. Others of the guests enjoyed golf on the club course.

Visit Natural Bridge and Forest Tavern

Thursday afternoon at 2 o'clock, motors conveyed the women who are attending the state medical meeting on a trip to Natural Bridge, where they viewed this interesting natural wonder. Later in the afternoon there was a tea for the ladies at Forest Tavern. Receiving the guests were Mrs. W. W. S. Butler, Jr., Mrs. W. L. Powell and Mrs. J. T. McKinney. The tea table was presided over by Mrs. William R. Whitman and Mrs. Harry B. Stone. Among others assisting were Mrs. C. D. Nofsinger, Mrs. Alfred P. Jones, Mrs. Littleton Davis, Mrs. Kenneth Graves, Mrs. F. W. Barger, Mrs. T. D. Armistead, Mrs. Hayward Wescott, Mrs. Elbyrne Gill, Mrs. Fred F. Oast, Mrs. Churchill Robertston, Mrs. Fred Hamlin, Mrs. George Lawson, Mrs. J. D. Willis, Mrs. Blanton P. Seward, and Mrs. M. A. Johnson.

The Truth About Medicine

In addition to the articles enumerated in our letter of August 28th, the following have been accepted:

Abbott Laboratories
- Neocinchophen—Abbott Tablets, 7½ grains.

Lederle Laboratories, Inc.
- Diphtheria Toxoid, two 1 c.c. syringe packages.
- Diphtheria Toxoid, two 1 c.c. vial packages.
- Diphtheria Toxoid, one syringe package.
- Diphtheria Toxoid, one vial package.
- Solution Liver Extract Parenteral (Lederle).

E. R. Squibb & Sons
- Diphtheria Toxin for the Schick Test, Ready to Use Without Dilution.
- Scarlet Fever Streptococcus Toxin—Squibb, six 10 c.c. vial packages.
- Squibb Liquid Petrolatum with Agar and Phenolphthalein.

New and Non-official Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Non-official Remedies:

Pentobarbital-Sodium—Sodium ethyl (1-methylbutyl) barbiturate. Sodium ethyl (methylpropylcarbinyl) barbiturate. The monosodium salt of ethyl—(1-methylbutyl) barbituric acid. Pentobarbital-sodium differs from barbital, U. S. P. (sodium diethylbarbiturate) in that one of the ethyl groups of the latter is replaced in the former by a 1-methylbutyl group. The actions and uses of pentobarbital-sodium are essentially similar to those of barbital, but it is effective in smaller doses. The action is of relatively brief duration, which may constitute an advantage, especially when relatively large doses are administered. It is used as a sedative, particularly prior to local, general or spinal anesthesia. It can be used safely for such purposes only by those who have had adequate experience and who are familiar with the literature concerning such use. The drug may be administered by mouth or rectum; intravenous injection is considered unsafe.

Capsules Pentobarbital-Sodium—Abbott, 1½ grains.—Each capsule contains pentobarbital-sodium—N. N. R., 0.1 Gm. (1½ grains). Abbott Laboratories, North Chicago, Ill.

Pulvules Pentobarbital-Sodium—Lilly, 1½ grains.—Each pulvule (capsule) contains pentobarbital-sodium—N. N. R., 0.1 Gm. (1½ grains) and starch, 0.13 Gm. Eli Lilly & Co., Indianapolis, Ind. (Jour. A. M. A., September 5, 1931, p. 705).

Skiodan.—Methiodal.—The sodium salt of mono-iodo-methanesulphonic acid. Skiodan contains 52 per cent of iodine. It is proposed as a therapeutically indifferent medium for roentgenography, especially for visualization of the urinary tract either by intravenous injection or by direct injection into the renal pelvis through a ureteral catheter. It has also been administered rectally. Winthrop Chemical Co., Inc., New York.

Gynergen Solution 0.1 Per Cent.—Each c.c. of solution contains 1 mg. of gynergen (New and Non-official Remedies, 1931, p. 183) and a small excess of tartaric acid. Sandoz Chemical Works, Inc., New York.

Squibb Chocolate Vitavose.—A mixture of Squibb's vitavose (New and Non-official Remedies, 1931, p. 245), 30 per cent, with cocoa, milk solids and sucrose. E. R. Squibb & Sons, New York. (Jour. A. M. A., September 12, 1931, p. 779).

Scarlet Fever Streptococcus Toxin—Squibb (New and Non-official Remedies, 1931, p. 370).—This product is also marketed in packages of six 10 c.c. vials of toxin containing, respectively, 500, 2,000, 8,000, 25,000, 40,000 and 40,000 skin test doses per c.c. E. R. Squibb & Sons, New York. (Jour. A. M. A., September 26, 1931, p. 930).

Foods

The following products have been accepted by the Committee on Foods of the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in Accepted Foods:

SMACO (200) Whole Milk Sterilized (S. M. A. Corporation, Cleveland, Ohio).—A canned sterilized homogenized whole milk. It is recommended for all uses of whole milk and especially for infant feeding. (Jour. A. M. A., September 12, 1931, p. 780).

Accepted Devices for Physical Therapy

The following have been accepted by the Council on Physical Therapy of the American Medical Association for inclusion in its list of Accepted Devices for Physical Therapy:

Victoreen r-Meter.—The Victoreen r-Meter is an instrument designed to determine rapidly the intensity of roentgen rays at any point in roentgens per minute. The instrument consists of a small ionization chamber rigidly connected to a string electrometer by means of a metallic tube. It is supplied in four scale values, 0-5, 0-10, 0-25, 0-50 roentgens, the total value depending on the range of intensities to be measured. The construction of the apparatus includes shielding from extraneous rays, and the apparatus may be used with any quality of roentgen radiation from 30 peak kilovolts upward. Victoreen Instrument Company, Cleveland, Ohio.

Fricke-Glasser X-Ray Dosimeter.—The Fricke-Glasser X-Ray Dosimeter (or, more properly, quantimeter), is an instrument designed to measure the quantity and intensity of roentgen rays and is calibrated in international roentgens. The instrument consists of a small ionization chamber and a string electrometer connected to each other by means of

a rigid metal tube filled with ceresin and a flexible metal tube. The instrument can be mounted on a table and can thus easily be moved from one treatment room to another. The manufacturers claim that the error in accuracy does not exceed one per cent. The ionization chamber is intended to be placed directly on the patient in the field of irradiation. Victoreen Instrument Company, Cleveland, Ohio. (Jour. A. M. A., September 12, 1931, p. 729).

Propaganda for Reform

Bismuth in the Treatment of Syphilis.—In the selection of a bismuth preparation the different factors come up as to whether one wants a soluble or an insoluble preparation, how often the dosage is going to be given, and how rapidly it is desired to have the preparation absorbed. The average effective bismuth preparation should contain from 0.03 to 0.2 Gm. of metallic bismuth in a dose and a course of therapy lasting eight to ten weeks should probably amount to from 0.6 to 2 Gm. of metallic bismuth. The Council on Pharmacy and Chemistry has gone on record as opposed to intravenous bismuth therapy. The therapeutic dose is too close to the toxic dose; therefore, one is limited to intramuscular injections. If one is desirous of a preparation with comparatively rapid absorption and one that probably should be given twice a week, one might employ the thio-bismol in a dose of 0.2 Gm. (metallic bismuth, 0.075 Gm. per dose); or the potassium sodium bismuth tartrate, aqueous solution, usually with a dose of 0.1 Gm. (metallic bismuth, 0.04 Gm. per dose). These soluble preparations should be given twice a week and are hardly suitable for general office practice. When one administration per week is feasible only, one is forced back on the use of a soluble preparation suspended in oil, or an insoluble salt suspended in oil. Recently, there has been a turn to the use of liposoluble bismuth preparations; there is a claim that these combine the good points of both the soluble and the insoluble salt, but it is too early to answer this question definitely. (Jour. A. M. A., May 16, 1931, p. 1721).

Science and the Advertiser.—*Printers' Ink*, a journal for advertisers, is anxious to establish a "Forget Scientists Week": "Perhaps you have been so foolish as to think that scientists worked at the business of science. Not so. They test cigarettes, tell frightened mothers about breakfast foods, warn young men against the dangers of something that usually ends with—osis. Now and then to be sure they make an epoch-making discovery which will bring about an astounding revolution in the manufacture of nine-count, full-fashioned galoshes. In short, they are scientists of the advertising pages." *Printers' Ink* recognizes the dismay that has been aroused in scientists generally by the exploitation of pseudoscience in advertising. It ridicules those who are now preparing copy for advertisements in modern periodicals, because they are so utterly lacking in originality. Advertising in the periodicals of the United States has gone to lengths that have opened it to ridicule and censure. (Jour. A. M. A., May 23, 1931, p. 1799).

Effects of Female Sex Hormone on Conception.—Experiments on guinea pigs made with a view of determining the effects of injections of the female sex hormone on conception and on pregnancy, showed that the female sex hormone is the active agent in producing estrus. In previous studies it had been found that injections of the serum from pregnant women would delay the onset of estrus in guinea pigs. These observations would seem to indicate an antithetic action between the female sex hormone and the corpus luteum hormone. Other experiments have indicated that the injection of the female sex hormone into pregnant white rats would terminate the pregnancy if it had not exceeded five days. Other investigators also, using white mice, were able to prevent conception and to interrupt pregnancy at any stage with comparatively small doses of the sex hormone. With guinea pigs small doses of the female sex hormone prevented conception and with larger doses it was possible to interrupt pregnancy and in some cases caused the death of the mother. (Jour. A. M. A., May 16, 1931, p. 1698).

Vapex.—Vapex is manufactured by Thomas Kerfoot and Company, Ltd., England, and is distributed in the United States by E. Fougera and Co., Inc., New York. The stuff is sold at a price that seems to be enormously in excess of the cost of its ingredients, which may explain the vast sums that have been spent on persuading the public that the product is a marvel of therapeutic efficiency. Some of the advertising slogans have been: "Vapex Amazed Scientists. . . . Its vapor kills cold germs." "Instant relief for nasal affections with its delightful vapor." An advertisement in *Good Housekeeping* contains the preposterous statement to the effect that "relief from head colds is instantaneous with Vapex." Vapex was examined in the A. M. A. Chemical Laboratory and as a result of this examination the Laboratory concluded that a solution having essentially similar chemical and physical attributes as Vapex may be made as follows: Menthol 15 Gm., Oil of Lavender Flowers 15 c.c., Alcohol 94 per cent to make 100 c.c. It thus appears that this alleged "important medical discovery" is essentially menthol dissolved in alcohol and perfumed with oil of Lavender! And it is sold with the implied claim that it will cure nasal infections, give quick relief from catarrh and hay fever, and prevent influenza! (Jour. A. M. A., July 18, 1931, p. 196).

Book Announcements

Simplified Diabetic Management. By JOSEPH T. BEARDWOOD, Jr., A. B., M. D., F. A. C. P., Chief of Diabetic Clinic and Associate Visiting Physician Presbyterian Hospital, Philadelphia; Physician in Chief to the Department of Metabolic Diseases, Abington Memorial Hospital, etc. And HERBERT T. KELLY, M. D., A. A. C. P., Associate in Diabetic Clinic, Presbyterian Hospital, Philadelphia, etc. Diets prepared with the collaboration of ELSIE M. WATT, A. B., formerly Dietitian Diabetic Clinic Presbyterian Hospital, Philadelphia. Philadelphia. J. B. Lippincott Company. 1931. 12mo. of 190 pages. Illustrated. Cloth. Price $1.50.

Tales of the Cochiti Indians. By RUTH BENEDICT. Smithsonian Institution. Bureau of American Ethnology. Bulletin 98. United States Government Printing Office. Washington. 1931. Octavo of 256 pages. Paper. For sale by the Superintendent of Documents, Washington, D. C. Price 40 cents.

Careers. Medicine. Leaflet No. 6. United States Department of the Interior. Office of Education. By WALTER J. GREENLEAF, specialist in higher education. United States Government Printing Office. Washington, D. C. 1931. Pamphlet. For sale by the Superintendent of Documents, Washington, D. C. Price 5 cents.

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All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

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Editorial

Secondary Anemia.

The pallid patient is often brought to the clinical attention of the practitioner. Any practice has a more or less fair proportion of patients showing some form of anemia. The doctor has to investigate this important condition. He has the necessity before him of making a diagnostic study into the nature and, if possible, the cause of the anemia. In these times, pernicious anemia may first be investigated through a laboratory study of the blood and a careful physical examination and a complete history investigation. This condition is relatively rare in comparison to anemia of a secondary nature. Wide publicity, in medical publications, of recent therapy in pernicious anemia, where the use of liver extract and liver feeding has brought about more or less favorable results and apparently retarded the progressive downward course of these patients, has caused a concentration of thought upon pernicious anemia, where, as there is far more prevalent anemia of the secondary type in patients. Fortunately, inquiry into this important situation of the secondary anemias has more recently taken form, and more investigation into the more frequent condition has been effected. One has only to recall that many primary factors may exhaust and deplete the blood supply and its important elements in point of volume, cell numbers and hemoglobin.

Bleeding, whether in large or small amount from some hidden area, may bring about secondary anemia. Such hemorrhaging as is found in clinical conditions such as gastric or duodenal ulcer, bleeding from hemorrhoidal veins; uterine bleeding; from intestinal parasites, such as hookworm and tape worm; chronic malarial infection; malignant disease; chronic suppurations; chronic nephritis; chronic conditions of the liver, as cirrhosis; chronic lead, phosphorus or silver poison; chronic inflammations of the colon; chronic disease of the lung or pancreas—these and other primary conditions may bring about secondary anemia and demand attention from the point of view of the red cell side of blood volume. The terminology of anemias may be, as yet, quite confusing to the physician and the classifications of various anemias be unsatisfactory but the practitioner may feel encouraged over the prospect from the fact that in the face of secondary anemia, microscopic, laboratory, Roentgen-ray and physical examination may discover the primary cause and in some instances these can be removed and effective therapeutic measures may be found to bring the red back to the blood.

Large doses of iron and possible association of phosphorus together with adequate feeding of balanced rations of proper vitamin qualities make for regeneration and improve-

ment of blood values. Publications and reports point to the return to iron therapy; sometimes advantageously used with liver therapy, ultra violet rays and fresh air.

Multiplicity of Medical Organizations.

Following the World War and influenced by contemporaneous conditions of several kinds, there developed in this country a situation of multiplied and manifold organization groups among medical men. This increase of organizations was a more or less natural evolution and has brought about, doubtless, many advantages in the increase of knowledge, in the spread of medical influence and in the promotion of health measures throughout the land. Naturally, such a wholesome movement as many of these organizations possessed brought about, it is feared, a complex situation in medical organization. As one considers the multiplicity and overlapping of these meeting groups, one is struck by the effect that may soon be felt of retarding rather than improving the general welfare of physicians and the public. One should be careful in expressing a word of caution as one considers the advantages of meeting together of medical men for study and contemplation of medical problems, but one may err here as elsewhere in life's set up for promotion of the welfare of public good. So it may be well to take a more conservative view of membership in multiplied medical organizations and to make a careful survey of one's requirements in this field and to choose those that would seem to represent the most helpful influences and to withdraw from unnecessary and overlapping organizations that take unduly of one's time and make for reduplication and loss of motion in medical effort. The county, state and national medical organizations stand as fundamentally necessary to every doctor. Special societies, in limited degree, afford further needed means for improvement and efficiency. Meetings and organizations of hospital staffs also are important.

Food Advertising and the Medical Profession.

Horses, dogs, sheep and cattle are known to be influenced materially by the kinds and quality of food daily given them. The vigor, endurance and spirit of the horse and dog may be entirely changed by a routine of feeding; the quality, size and usefulness of sheep and cattle may be greatly affected in one season by the quality and kind of food given them. Fortunately, man appears to posses inherent physiologic powers of far wider proportion than lower animals when it comes to considering the effect of feeding upon the vigor, endurance, size and health of the body, but, doubtless, in a more or less degree the comparison may be insisted upon for the purpose of pointing out the dependence of all animal life upon the nature and quality and amount of the food taken daily. From such a general point of view, one may point to the appropriateness of medical supervision and inquiry into the quality and nature of food products advertised to American citizens by food manufacturers. It is fundamentally a professional obligation that the American Medical Association has begun to discharge to the public, as it has brought forward more and more actively and thoroughly the important operation of its Committee on Food. It is now a cause for professional satisfaction that the medical reader may have offered to him each week a report, by an authorized body of the medical profession, upon this important matter. For the physician has now only to refer to the *Journal of the American Medical Association*, which comes to his desk each week, to obtain reliable information on important facts concerning widely advertised food products. As the work continues and more and more products are considered and evaluated, the physician will have, in the collected compilation of his weekly journals, if properly bound and placed in his library, a valuable and authoritative work upon this important phase of his daily practice.

It appears that primarily this Committee on Foods was established to protect medical readers from the unwarranted claims made by manufacturers and sellers of foodstuffs. The advertisement of foods had begun to take on proportions of extreme importance because public places, billboards and the radio had become flooded with extravagant claims for special products. With the importance of food, in its relation to disease, in its relation to obesity and with its relation to the nationwide effort to "reduce" on the part of women and men, and with the effects of food upon allergic individuals, with the effect of food upon the malformed, underfed and deficiency diseased persons, with the effect of food on the emotions and nervous system and its action through the

vitamins, upon the structural and procreative systems and etc., the indiscriminate advertisement claims were wisely brought under the scrutiny of the authoritative agency of American medicine—the Committee on Foods of the American Medical Association.

Doubtless the effect of this body upon this problem will find its counterpart in that high service rendered the user of drugs by drug advertising by the Council on Pharmacy which has functioned with national influence for the past twenty-five years to the protection of the public and the education of working physicians. A. G. B.

Our President, Dr. Isaac Carrington Harrison.

It is notable that after an interval of some three decades the Medical Society of Virginia for its third time has selected a president from Danville, our southernmost city, Dr. Isaac Carrington Harrison, who, following his election of last year as President-elect, now automatically becomes president.

I. C. HARRISON, M. D.,
President, Medical Society of Virginia

Dr. Harrison was born at the "Wigwam," Amelia County, December 18, 1870. He is of old Virginia lineage in which the professions are well represented. His paternal grandfather conducted Amelia Academy, a school for boys, in which Dr. Harrison received his early education. His father was a Baptist minister and a Confederate veteran. His mother was Anna Mayo Carrington, of Charlotte County, the granddaughter of Judge Paul Carrington of the Court of Appeals of Virginia.

After obtaining his B. A. degree from Richmond College, Dr. Harrison taught two years at Judson College, N. C., entering the medical department of the University of Virginia in 1892, receiving his degree of M. D. in 1895. During his third year as a student he held the position of assistant demonstrator of Medical Biology and Pathology. The year following his graduation he served as instructor in Chemistry at the University, assisting Dr. J. W. Mallett. At this time he numbered among his classmates and associates Drs. A. L. Gray and W. T. Graham, of Richmond, Dr. Hugh Young. of Baltimore, Dr. W. S. Leathers, of Vanderbilt University, and Drs. Hugh S. Cumming and L. L. Lumsden, now of the Public Health Service.

During 1897 Dr. Harrison served as an intern at the Johns Hopkins Hospital and the following year as instructor in Chemistry at the University College of Medicine in Richmond, maintaining an office on West Grace Street. From 1898 to 1910 he practiced in Clarksville, Va., removing to Danville in 1910, where he has practiced continuously since.

In January, 1899, Dr. Harrison was married to Miss Rosalie Smith, daughter of Professor Francis Smith, of the University of Virginia. The family now consists of two daughters and three sons, two of the latter of whom are students of medicine.

In addition to his practice in Danville, Dr. Harrison has devoted much time and thought to educational and civic matters, having served for ten years as a member of the School Board, and for a number of years as chairman of that body. During the World War he served as a member of the Medical Advisory Board. He has likewise served as a member of the Playground and Recreation Association of Danville, as a member of the Danville Board of Health, and was instrumental in the establishment of the Hill Top Tuberculosis sanatorium. Since 1918 he has been a member of the Virginia State Board of Medical Examiners, examining upon various subjects and has served for the greater por-

tion of this time as Chairman of its Question Committee. In addition to the State organization, he is a member of the National and of local medical organizations; he has served as a member of the Executive Staff of Memorial Hospital, Danville, since its organization, and as President of the Danville Academy of Medicine during 1928.

During his incumbency of the office of President-elect of the Medical Society, in conjunction with the President, it has among other important duties devolved upon Dr. Harrison to supervise and direct the activities of the Society in Graduate Clinical work, in which work he has been active and untiring and in which substantial advancement has been made.

Dr. Harrison's training and experience, together with his willingness and capacity for work, well fit him for the role of President.

J. W. P.

President's Message

In entering upon my duties as President of this Society I wish again to express my sincere thanks and appreciation for the high honor you have bestowed upon me. I am sensible of the fact that there is no greater compliment that could come to a member of the Medical Society of Virginia than the peculiar privilege of taking his place in the long list of distinguished physicians who have occupied this office. It is my heartfelt desire and purpose to perform the duties of the office faithfully and efficiently. To this end I ask your hearty cooperation and assistance in directing the activities of the Society, and your kind indulgence in solving the perplexing problems that may confront us in the new and untried work that may be undertaken during the coming year.

As President, it is my duty to select the chairmen of the various committees, to fill vacancies, and to change the personnel of the various committees, when the best interests of the Society seems to call for such changes. It is customary as far as practical to have the committees represent all divisions of the State, and unwise to retain one person in the same position over long periods. The President will be glad to confer with the Chairmen of all committees in reference to the work proposed to be done, and solicits correspondence with all members on any subject pertaining to the welfare of the Society.

Many of you have shown interest in the past year in the work of the Department of Clinical Education. As you all must know, this work is under direction of the President-elect, who, with the other members of the Department and with the active help of the Councilors in each District, is attempting to promote a plan of continuous post-graduate education for all the doctors in this State. One of the wonderful things about medicine is that there is always something new and useful to learn, and it is our duty anl privilege to see that this knowledge is passed along to the other fellow.

After a year as Chairman of this Department and after seeing this work grow because of the cooperation and hearty interest shown by a number of our Councilors and by the officers of a number of the local societies, I am sure that under the direction of our President-Elect. Dr. Flippin, during this coming year there will develop still greater interest in this more than worthwhile undertaking.

It is sincerely hoped that plans will be made and dates fixed for clinical meetings throughout the State. Decide whether you desire a discussoin of one subject—cancer—obsterics—pneumonia—tuberculosis, for example, or whether it is desired to have a mixed program. Also decide whether the clinicians and lecturers shall be those in your own community, or whether you desire the Department of Clinical Education to assist you in securing speakers. Dr. Flippin will doubtless be glad to assist you in selecting a subject and will also help you in securing clinicians or speakers.

The Department of Clinical Education will hold the regular meeting in Richmond in December, and at that time it will probably be decided whether the committee on Postnatal and Prenatal clinics will undertake to begin their work during the current year. This is a sub-committee of the Department of Clinical Education. It is composed of two members from each of the State Medical Schools, two

from the Society at large and two, added at the request of a special committee meeting in Roanoke, who are country doctors. The whole purpose of these clinics will be to benefit and educate the physicians through post-graduate training.

It is contemplated that an able whole-time clinician in obstetrics and gynecology shall conduct clinics in designated centers for groups of physicians, and at times to meet physicians in their offices to assist them, but only at their request. The details of the plan will be published later. It is our sincere desire in attempting to introduce this plan of education to place our profession in the forefront of preventive medicine. We hope to lower the mortality rate of mothers and the newborn to such an extent, and to so impress the public with the efficiency and skill of our physicians, both town and country, that no woman will be satisfied to pass through the ordeal of childbirth without the supervision and care of a competent physician.

I. C. Harrison, M. D.,
President, Medical Society of Virginia.

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

Foreword.

Following the custom of the past several years, the President-Elect of the Society becomes Chairman of the Department of Clinical Education. The material for this issue of the Monthly was called for almost immediately after the annual meeting in Roanoke. In consequence a brief statement only is possible.

Since its inception I have had a lively interest in the Department of Clinical Education and unfaltering faith in its opportunities for service to the medical profession of the State. It has been my privilege to be rather closely associated with the activities of the department in the past and I am well acquainted with the fact that those who have preceded me in office have given most freely of their time and strength to this work. Through their efforts we are probably on the threshold of a period of greater activity and wider usefulness. It is, therefore, increasingly important that the activities of this department be at all times aligned with the needs and desires of those it was designed to serve.

To the end that the work go forward in a manner worthy of my predecessors—and it must do this—my first desire and impulse is to ask for the full cooperation of members of the Society. More especially does the committee charged with these responsibilities invite the constructive thought and friendly counsel of the councilors of the several districts upon whom this responsibility also rests. The effort will be made to keep members of the Society fully informed of the activities of the department on this page of the Monthly.

J. C. Flippin, M. D.,
President-Elect and Chairman, Department of Clinical Education.

The Third Year Begins.

"Medical education is not a purely medical problem. Every one has a right to participate in the dividends of modern medicine; consequently, the public looks to us. The steadily increasing group consciousness of organized medicine and its growing desire to assume leadership in the solution of the great problems of public health, fix on us a very definite responsibility. In the continuous education of the practicing physician we see the greatest single contribution that organized medicine can make, and responsibility rests not on the medical college but on us." So it is written by Dr. Charles A. Gordon, a conspicuous leader in post-graduate medical education in Brooklyn and New York State.

As Chairman of the Committee on Public Health and Medical Education, Dr. Gordon at one time administered the extensive program of post-graduate training sponsored by the Medical Society of the State of New York. In its third year the Committee was conducting courses of four to six weekly two-hour sessions in counties throughout the State. Attendance reached a total of 3,268 in one year,

and the average cost per student-physician in attendance was $1.38; next year by combining two or more local groups the average cost per student in attendance at one meeting was reduced to eighty-six cents. The courses dealt with a variety of subjects: internal medicine, heart diseases, obstetrics, pediatrics, diseases of the heart and lungs, nephritis, metabolism, syphilis, gastro-entrology, surgery, and other branches.

Three distinctive features of the New York Society's program were its careful investigation into the needs and desires of the county society for which a course was to be arranged, its close check upon the results of each meeting as reported by the local secretary, and its standing invitation to the county units to "ask for anything they want" from single lectures to courses of any length—and in most cases the demand was met.

Lacking the resources of its larger sister society, the Medical Society of Virginia through its Department of Clinical Education has had to confine itself to a less ambitious program during the two years of its organized effort to make educational facilities available for its members. The Department has continued to offer its assistance in the arranging of scientific meetings, and whenever the offer was accepted it has been able to contribute in some degree to the success of the program. An actual count over a twelve months' period shows a total of fifty-four meetings by thirty-two county and regional societies reported in the Virginia Medical Monthly. Exactly two-thirds of these meetings were scientific and educational; the others were held for social and business purposes. But these thirty-two societies whose activities were reported constitute less than half the number of component units. What the others were doing during this period is, so far as the central records are concerned, a secret that probably will never be revealed.

It is a definite aim of the Department of Clinical Education to publish on this page in as complete form as possible an advance schedule of educational meetings as they are arranged. If these notices can be followed up by accounts of what happened at the meetings, another advance will have been made. But the Department hopes to obtain a minimum of indispensable information in regard to the value of the program, the suitability of the subjects considered, the attendance, the particular problems revealed, and suggestions for improvement in future meetings. Over a period of years this data will serve to eliminate many of the difficulties that are coming to light in the initiation of the new program of continuing medical education.

In short, the Department aspires to have the local societies, like those in New York, ask for anything they want. The only reason for the Department's existence is to minister to the need expressed in such requests, and it will gladly use all the resources at its command in any opportunity to expand and develop postgraduate medical education in Virginia.

George W. Eutsler,
Executive Secretary.

SCHEDULED MEETINGS

Programs of Norfolk County Medical Society

November, 1931.

Monday, 9th November—Section on Surgery

Acute Cranio-Cerebral Injuries. Dr. C. Carroll Smith.

Surgical Treatment of Lung Abscess. Dr. Horace G. Ashburn.

Monday, 16th November—Section on Medicine

Public Health Session, under direction of Dr. J. Jett McCormick, Health Commissioner of Norfolk.

Monday, 23rd November—Section on Obstetrics

Some Case Reports. Dr. G. Bentley Byrd.

Trichomonas Vaginalis Vaginitis. Dr. C. J. Andrews.

Monday, 30th November—Section on Eye, Ear, Nose and Throat

Program to be arranged.

The South Piedmont Medical Society

Will hold its regular semi-annual meeting in Lynchburg, Va., November 24th, under the presidency of Dr. C. W. Pritchett, of Danville. Dr. Geo. A. Stover, South Boston, is secretary.

The subject for general discussion at this meeting will be "Arthritis," with the following subdivisions and leaders:

Etiology and Pathology. Dr. D. P. Scott, Lynchburg.

Treatment of Acute Arthritis. Dr. J. J. Neal, Danville.

Treatment of Chronic Arthritis. Dr. T. N. Davis, Lynchburg.

Orthopedic Treatment. Dr. B. H. Kyle, Lynchburg.

All members of the State Society will be welcome at this session.

Proceedings of Societies

The Southwestern Virginia Medical Society

Held its semi-annual meeting at Marion, Va., September 24th and 25th, with the president, Dr. E. G. Gill, of Roanoke, presiding. In addition to the papers presented by the invited guests, Dr. Horton Casparis, of the Vanderbilt University, Nashville, Tenn., and Dr. I. A. Bigger, Medical College of Virginia, Richmond, there were a number of interesting papers by members of the Society.

The following officers were elected for the ensuing year: President, Dr. George A. Wright, Marion; vice-president, Dr. Nat Copenhaver, Bristol; and secretary-treasurer, Dr. A. M. Showalter, Christiansburg (re-elected). Dr. A. B. Greiner, Rural Retreat, was elected a member of the Executive Committee. The following men were also elected to membership in the Society at this meeting: Drs. J. A. Soyars, Saltville; T. N. Spessard, Roanoke; E. V. Richardson, Glade Spring; and D. C. Boatwright, Marion. The next meeting will be held in Bristol, Va., during the latter part of March, 1932.

Roanoke Academy of Medicine.

A called meeting of this society was held on September 28th for the purpose of hearing reports from the chairmen of various committees for the Medical Society of Virginia meeting and for the election of officers. Dr. John O. Boyd. president presided.

The following officers were elected for the ensuing year: President, Dr. Everett E. Watson; vice-presidents, Drs. F. A. Farmer and E. C. Ambler; secretary-treasurer, Dr. Charles H. Peterson; members of the Executive Committee, Drs. H. B. Stone, I. E. Huff, Paul Davis, E. C. Watson, and Churchill Robertson. The members of the Judiciary Committee as elected are: Drs. J. W. Preston, H. H. Wescott, E. G. Gill, J. D. Willis and W. L. Powell. Delegates to the meeting of the Medical Society of Virginia were also elected at this time.

The Rockbridge County Medical Society

Met at Jackson Hospital, Lexington, Va., September 22nd, with Dr. F. L. Thurman, of Buena Vista, presiding. Dr. Charles Groseclose, of Buena Vista, gave a very interesting paper on Potassium Sulpho-Cyanate in the Treatment of Hypertension. He stated that the drug is not without danger and in his cases, the beneficial results were transient. Dr. Reid White, Jr., of Lexington, gave a very instructive talk on Arthritis, stating that in addition to eliminating all foci of infection, special diets are very important. Dr. T. F. Kennan, of Raphine, was elected to membership.

Dr. Howard L. Mitchell, Lexington, is secretary of this society.

The South Piedmont Medical Scoiety,

At its regular meeting last April, elected the following officers for the ensuing year: President, Dr. C. W. Pritchett, Danville; vice-presidents, Dr. J. J. Neal, Danville; Dr. F. O. Plunkett, Lynchburg; Dr. C. B. White, Halifax; and Dr. Thos. G. Hardy, Farmville. Dr. Geo. A. Stover, South Boston, was re-elected secretary-treasurer. It was voted to hold the next meeting in Lynchburg on the fourth Tuesday in November.

At this meeting, the preamble to the Constitution and By-Laws of the Society was amended so as to provide that physicians residing in the counties of Bedford, Amherst and Appomattox shall be eligible for membership in the South Piedmont Medical Society and be invited to join.

The Clinch Valley Medical Society,

Held its semi-annual meeting in Gate City, Va., September 30th, under the presidency of Dr. N. W. Stallard, of Dungannon. Visiting clinicians for this meeting were Drs. F. O. Plunkett, Lynchburg, and Drs. W. H. Higgins and Wyndham B. Blanton, Richmond. The doctors from the various counties composing this society met and appointed delegates to the Roanoke meeting of the State Society.

Dr. Frank Pyott, Tip Top, was elected president for the ensuing year, and Drs. G. B. Setzler, Pennington Gap, and V. W. Quillen, Nickelsville, vice-presidents. Dr. C. B. Bowyer, Stonega, was re-elected secretary-treasurer. It was voted to hold the next meeting of the Society at Appalachia, Va.

Culpeper County Medico-Dental Society,

At its monthly meeting in October, at which the president, Dr. D. W. Kelly, Jr., presided, elected the following officers: President, Dr. M. B. Lewis (dentist); vice-president, Dr. J. L. Stringfellow; and secretary-treasurer, Dr. O. Kyle Burnette.

News Notes

—and a Good Time Was Had by All.

The annual meeting of the Medical Society of Virginia in Roanoke, October 6th, 7th and 8th, is one which will long be remembered by those fortunate enough to attend, not alone for the lovely entertainment provided but also for the excellent scientific program and the smoothness with which the program was conducted. The local committee had laid its plans so that everything moved without a hitch. The president, Dr. J. Allison Hodges, of Richmond, was assisted in presiding at the various sessions by Dr. I. C. Harrison, president-elect, and by the vice-presidents, Drs. M. B. Hiden, C. B. Bowyer and J. M. Hutcheson.

A special feature of the opening day was clinics arranged by the Roanoke Academy of Medicine on obstetrics, pediatrics and medicine, these being conducted by three visiting clinicians of prominence—Dr. P. Brooke Bland, of Jefferson Medical College, Philadelphia; Dr. Charles Gilmore Kerley, of Polyclinic Hospital, New York; and Dr. Russell L. Cecil, of Cornell University, New York. Dr. Cecil was also one of the president's guests and presented a most excellent address at the general meeting on Tuesday evening. The other guest was Dr. Ralph P. Truitt, of Baltimore, who read the opening paper in the symposium on Mental Hygiene on Wednesday morning. This symposium was excellent and it will be a matter of interest to our readers to know that all papers and discussions on this subject will appear in an early issue of the Monthly. There was a luncheon given all members of the Society following this session.

On Wednesday evening, there were brief reports by a number of the committees of the Society that the members generally might have an insight into the business side of our organization. This was the meeting at which our new State Health Commissioner, Dr. Warren F. Draper, made his initial appearance before a large gathering of the Virginia profession. Health officers from nearby states had been invited for this special session. Those attending were Dr. A. T. McCormack, from Kentucky, Dr. R. H. Riley from Maryland, and Dr. W. T. Henshaw from West Virginia, all of whom extended greetings from their states and welcomed Dr. Draper to the "family" of State Health Commissioners. This session was followed by a reception to the President of the Society, guests and members, with a splendid cabaret and grand ball.

The last session of the Society was held at Catawba Sanatorium, at which place an excellent dinner was served those attending. The lovely drive to and from the Sanatorium, the luncheon and interesting session there made a fitting close for a most enjoyable and interesting meeting. At this session Dr. I. C. Harrison, Danville, was installed as president and Dr. J. C. Flippin, University, as President-elect. The vice-presidents for the ensuing year are: Drs. G. F. Simpson, Purcellville; F. H. Smith, Abingdon; and Warren T. Vaughan, Richmond. The place of meeting will be named later by the Council.

Under the department assigned to the Woman's Auxiliary is a report of the lovely entertainments provided for the ladies.

At the golf tournament, on the first day of the meeting, Dr. T. N. Spessard, Roanoke, won the silver cup for low net score; Dr. R. H. DuBose, Roanoke, a silver cocktail shaker for low gross score, and Dr. Thomas G. Hardy, Farmville, was the recipient of the booby prize.

Minutes of Roanoke Meeting to Appear in December.

Owing to the fact that the reporter of our General Sessions has been suffering with a severe case of iritis, making it impracticable for her to transcribe notes taken, we will publish complete report of the General and Business Sessions of the Roanoke meeting of the Medical Society of Virginia in the December issue of the Monthly.

The Virginia Roentgen-Ray Club

Held its sixth annual meeting on Wednesday, October 7, 1931, at 6:30 P. M., at the Patrick Henry Hotel, Roanoke, Va. The club members at this time were dinner guests of Drs. J. T. McKinney, J. F. Armentrout and C. H. Peterson, of Roanoke

The guests of the club included: Dr. J. L. Hankins, of Johnson City, Tenn., and Mr. Edward C. Jerman, of the General Electric Company.

Due to the absence of the president, Dr. A.

L. Gray, Dr. J. T. McKinney was elected temporary chairman.

Dr. Charles Peterson, of Roanoke, was elected to membership.

A motion was adopted calling a special meeting to be held on the evening of Saturday, October 31st, in the city of Richmond, for the purpose of considering a tariff of fees, the election of officers, to receive the report of a committee appointed last year relative to the regulation of X-ray technicians in the State, and such other business as may be brought before the Club at that time.

A telegram was sent to Dr. Gray, expressing the regrets of the club members at his absence and a committee composed of Drs. D. D. Talley, Fred Hodges and Wright Clarkson was appointed with instructions to purchase a piece of silver with appropriate engraving and to present the same to our president, Dr. Gray, in appreciation of the work that he has done for the Club and the Science of Roentgenology.

WRIGHT CLARKSON,
Secretary-Treasurer.

The Virginia Pediatric Society

Held its annual luncheon meeting in the Patrick Henry Hotel, Roanoke, October 7th, the second day of the meeting of the Medical Society of Virginia, with the president, Dr. W. B. McIlwaine, Petersburg, presiding. The guest speaker on this occasion was Dr. Horton Casparis, professor of Pediatrics at Vanderbilt University, Nashville, Tenn., who spoke on "Tuberculosis in Children: Prevention and Control."

Officers elected for the ensuing years are: President, Dr. St. Geo. T. Grinnan, Richmond; vice-president, Dr. W. W. Waddell, University; secretary-treasurer, Dr. J. B. Stone (re-elected), Richmond.

The Governor's Conference on Childhood and Youth.

At the conclusion of the White House Conference on Childhood and Protection held last November in Washington, a resolution was adopted requesting every state in the union to have a State Conference as a follow-up of the White House Conference. The officials of the White House Conference requested the Cooperative Education Association of Virginia to be responsible for the follow-up in this State.

Governor Pollard, in keeping with the request made by the officials of the White House Conference that the Governor of each State call such a Conference, has issued such a call for Virginia, setting the dates as November 23rd and 24th. This happens to be at the same time as the Annual Meeting of the Cooperative Education Association so the Governor's Conference is held in connection with the regular Annual Meeting of this Association. The program of the Association will be set aside from the night of November 23rd through the night of November 24th and the State Conference on Childhood and Youth will occupy that period.

A Planning Committee was named by the Governor and the Executive Committee of the Cooperative Education Association early in the year. Members of this Committee are, in addition to the Governor, Dr. J. L. Jarman, President of the Cooperative Education Association and General Chairman of the Conference; Dr. Sidney B. Hall, Chairman of the Committee on Education and Training; Dr. Warren F. Draper, Chairman of the Committee on Health and Medical Service; Dr. W. T. Sanger, Chairman of the Committee on Character and Civic Education; Mr. Frank Bane, Chairman of the Committee on Welfare; and J. H. Montgomery, Secretary of the Conference.

The Chairmen of the four general committees have provided for a number of sub-committees. The Committee on Education has provided for sub-committees on "Child Labor" with Mr. John Hopkins Hall, Chairman; "Guidance" with Miss Bessie Mottley, Chairman; "Recreation and Physical Education" with Mr. Tucker Jones, Chairman; "The Family and Parent Education" with Mr. George B. Zehmer, Chairman; "Special Education" with Mr. H. M. McManaway, Chairman; "The Infant and Pre-School Child" with Dr. John L. Manahan, Chairman, and "The School Child" with Dr. George Oscar Ferguson as Chairman.

The Committee on Health and Medical Service has provided for sub-committees on "Maternal Care" with Dr. Greer Baughman as Chairman, and "Child Care" with Dr. L. T. Royster as Chairman.

The Committee on Character and Civic Education has provided for sub-committees on "Church Activities" with Rev. Minor C. Miller, Chairman; "The Home and the School" with Dr. E. L. Fox, Chairman; "Organized

Recreational and Character Building Agencies" with Mr. M. W. Lee Chairman and "Commercialized Recreation" with Dr. Rolvix Harlan, Chairman.

The Committee on Welfare has provided for sub-committees on "The Blind" with Mr. L. L. Watts, Chairman; "Mental Hygiene" with Dr. Beverley Tucker, Chairman, and "Underprivileged" with Miss Emily Dinwiddie, Chairman.

The purpose of this Conference is to try to find out just what is being done in Virginia at the present time to give childhood and youth of the State the best possible opportunities in the field of education and character and civic education, to find out what has been done to insure the best physical conditions and proper medical service, to study the problems with reference to neglected, dependent, underprivileged and delinquent children and youth, and see what is now being done for this underprivileged class. Then, to endeavor to appraise what is now being done and to point the way to future development along all of these lines.

Another purpose is to bring together the representatives of all of the agencies and organizations of the State that are doing anything at all in the field of service for childhood and youth that they may think and plan together in a great Statewide conference, set forth objectives and then follow this up by concerted effort to insure the best possible advantages for the childhood and youth of this great Commonwealth.

The Committees appointed are now busily at work on their task. Through the work of these committees, the Planning Committee desires to secure the information which will be necessary in proposing to the Conference some very definite objectives. These objectives will be in line with the findings of the White House Conference, but will perhaps be more definite and will be confined to the State of Virginia.

The Conference will be held at the John Marshall Hotel in Richmond. The opening session will be on Monday night, November 23rd. Governor Pollard will officially open the Conference, and his address will be followed by an address by Dr. Ray Lyman Wilbur, who was President of the White House Conference. On Tuesday morning the subcommittees will meet in places assigned to them for the purpose of discussing their topics and of having any delegates attending the Conference participate in the discussion of the subject assigned to the committee.

Tuesday afternoon the general committees will have meetings of their sub-committees jointly. The delegates to the Conference will have the privilege of attending and participating in the meeting of any of these committees.

On Tuesday evening the findings of the Conference will be presented for discussion and adoption. This will be followed by a brief address by Governor Albert C. Ritchie, of Maryland.

As a follow-up of the Conference findings will be presented to all of the organizations represented in the Conference. The leaders in each city and county of the State and in each local community will be requested to bring these findings to the attention of the citizens and to put forth an effort to help carry out the objectives.

Through the cooperation of all of these forces in Virginia, definite progress should be made during the next few years in bringing about better educational, health, social, civic, recreational and moral conditions.

The Southern Medical Association

Will hold its annual meeting in New Orleans, November 18th-20th. The program will present every phase of medicine and surgery, the new things and the new and better application of the old things. Everything will be presented under one roof, enabling physicians to go easily and quickly from one program activity to another. On the first day there will be a general clinical program arranged by Dr. Felix J. Underwood, Jackson, Miss., president of the Association, and also several other meetings. Sections will meet in half-day sessions on Thursday and Friday, and on Friday, running concurrently with the sections, a general program by New Orleans physicians will be given. The president's reception and dance, the outstanding social function of this meeting, will be held on Wednesday evening, preceded by a short session featuring the president's address. Thursday evening has been given over to alumni reunions.

The American Society of Tropical Medicine, the National Malaria Committee and the Southern Association of Anesthetists meet conjointly with the Association this year.

Entertainments will include golf tournaments for both the physicians and ladies and

a trap shooting tournament with the introduction of a new feature, skeet shooting. There will be special entertainment for the visiting ladies, this being under the direction of the Woman's Auxiliary to the Orleans Parish Medical Society.

An official S. M. A. post-convention cruise to the Tropics—Panama, the Canal Zone, and another Tropic Port will be given. Further information about this trip and other matters may be obtained from the secretary-manager, Mr. C. P. Loranz, Empire Bldg., Birmingham, Ala.

News From University of Virginia, Department of Medicine.

Dr. Lawrence T. Royster gave a course of lectures on The Physical Examination of the Child, before the Southern Pediatric Seminar at Saluda, N. C., during the first week of August.

Dr. Edwin L. McQuade, recently County Health Officer of Henrico, and for the past two years Assistant in the Department of Epidemiology of the School of Hygiene, Johns Hopkins University, has assumed his duties as Assistant Professor of Public Health in succession to Dr. George B. Young who retired at the close of the last session.

Dr. Kenneth B. Maxcy and Dr. Edwin L. McQuade attended the meeting of the American Public Health Association in Montreal from September 14th to 17th.

Dr. William H. Goodwin and Dr. Henry B. Mulholland represented the Medical School on the program of the Mercer County Medical Society, meeting at Bluefield, W. Va., from September 24th to 26th. Dr. Goodwin's contribution was on Endometriosis; Dr. Mulholland's on Diabetes with special reference to children.

Dr. Vincent W. Archer attended the meeting of the American Roentgen-ray Society at Atlantic City from September 22nd to 25th. Dr. Archer was Chairman of the Committee on Awards for the Scientific Exhibits.

Dr. John M. Nokes, for the past two years Instructor in Obstetrics and Gynecology at the Medical School of Vanderbilt University, has been appointed Assistant Professor of Obstetrics and Gynecology.

The Medical School opened on September 21st with a total enrollment of 240. The entering class numbers sixty-eight.

Col. M. L. Crimmins, U. S. Army, retired, visited the Medical School on October 1st. He spoke before the Albemarle Medical Society in Charlottesville on the subject of Rattlesnake Venom.

News From Duke University School of Medicine and Duke Hospital.

On October 1st the second year of the medical school began and 145 students of all four classes were registered.

The Nurses' Home, which is now under construction, is progressing rapidly and will accommodate approximately 230 nurses. The general plan is similar to that of the other dormitories on the campus.

On October 9th a clinic on undulant fever was given at the Duke Hospital by Dr. J. Powell Williams and Dr. Frederick W. Shaw, of Richmond, which was attended by the members of the veterinary profession of the State of North Carolina.

Medical College of Virginia News.

Construction of the library of the Medical College of Virginia, which will adjoin the library and home of the Richmond Academy of Medicine and be built at the same time, has begun. The architects are Baskerville and Lambert, Richmond, Va., and the consulting engineers Wiley and Wilson, of Lynchburg and Richmond. The contractors are Doyle and Russell, of Richmond.

This library will contain very ample offices, work rooms, a reference room, a large general reading room, five seminar rooms, and an attractive faculty room. Three stack levels will be equipped at this time and it will be possible to add two additional stack levels subsequently. The total housing capacity for books will be approximately a hundred thousand volumes.

The St. Philip Hospital school of nursing dormitory and education unit, toward which the General Education Board and the Julius Rosenwald Fund contributed $120,000, will be formally opened on Tuesday, November 10th, with appropriate exercises at 3 P. M. Dr. J.

H. Dillard, of Charlottesville, Va., will be the chief speaker. Brief remarks will also be made by Miss Elizabeth F. Miller, secretary of the Pennsylvania State Board of Examiners for Registration of Nurses, and Miss Charlotte Pfeiffer, representing the Virginia State Board of Nurse Examiners. President W. T. Sanger, of the college, will preside at the exercises.

This new unit for the school of nursing will accommodate ninety-four student nurses and staff members and provides one whole floor for teaching and recreational purposes. It is built immediately north of the St. Philip Hospital facing south on Marshall Street.

Ex-Interns' Association of St. Elizabeth's Hospital.

This Association held its eighth annual meeting on October 15th, at the hospital in Richmond, Va., with the president, Dr. Ralph Dunn, of Sumter, S. C., presiding. Clinics and operations by Dr. J. Shelton Horsley and staff were held at the morning session, followed by a luncheon at the Westmoreland Club. At the afternoon session, interesting papers were presented by Dr. Ralph Dunn, president, and Dr. Harry J. Warthen, Jr., Baltimore. A symposium on Diseases of the Blood was presented by Drs. Estill L. Caudill, Elizabethton, Tenn.; Raymond Vonderlehr, Washington, D. C.; and W. A. McGee, Richmond.

At the business session, the following officers were elected for the ensuing year: President, Dr. Raymond A. Vonderlehr, Washington, D. C.; vice-president, Dr. W. K. Dix, Richmond; and secretary-treasurer, Dr. John S. Horsley, Jr., Richmond (re-elected).

At the close of the meeting supper was served at the home of Dr. and Mrs. J. Shelton Horsley.

Department of Neurosurgery at University of Maryland.

A department of neurosurgery has recently been established at the University of Maryland School of Medicine, Baltimore, and Dr. Charles Bagley, Jr., of that city, has been placed in charge of this new division, with Dr. Richard G. Coblentz, also of Baltimore, as associate. Dr. Bagley was formerly associated with Dr. Harvey Cushing at Peter Bent Brigham Hospital, Boston.

Dr. Frank S. Johns,

Richmond, Va., has been elected president of the Richmond Chapter of the Hampden-Sidney Alumni Association, succeeding Dr. Wallace Blanton, who has served in this capacity for the past two years.

The American College of Physicians.

The Sixteenth Annual Clinical Session of the American College of Physicians will be held in San Francisco, Calif., April 4-8, 1932. The headquarters in San Francisco will be the Palace Hotel, where the general scientific sessions, registration, and exhibits will be held. Clinics will be conducted in various hospitals and institutions in San Francisco and nearby communities.

Dr. S. Marx White, Minneapolis, President of the College, has in charge the selection of speakers and subjects on the general program, while Dr. William J. Kerr, San Francisco, Professor of Medicine at the University of California Medical School, is the General Chairman of the Session, and is responsible for all local arrangements, in addition to the arrangement of programs and demonstrations. Following the San Francisco Session a post-convention tour will be conducted through Yosemite Valley, Southern California (with two days in Los Angeles) and the Grand Canyon of Arizona.

The attention of the secretaries of various societies is called to the above dates, in the hope that their societies will select non-conflicting dates for their 1932 meetings.

Dr. Van M. Ellis,

Of the class of '30, Medical College of Virginia, who completed an internship at the Wisconsin General Hospital, Madison, Wis., last summer, has received an appointment for 1931-32 as resident physician at Princeton University, Princeton, N. J.

S. M. A. Corporation Ten Years Old.

November, 1931, marks the tenth anniversary of the announcement of S. M. A. to the medical profession after years of experience had demonstrated its worth in the locality where it was developed. The company putting out this product was first known as The Laboratory Products Company and has since changed its name to the S. M. A. Corporation, of Cleveland, Ohio, advertisement of which appears in the MONTHLY.

We extend our congratulations and wishes for continued success to this Company.

Dr. Bergey With National Drug Company.

Dr. D. H. Bergey, formerly professor of Hygiene and Bacteriology, University of

Pennsylvania School of Medicine, has been appointed Director of Research in Biology by the National Drug Company of Philadelphia. Professor Bergey is well known as a teacher and as director of research in bacteriology at the University of Pennsylvania and is unusually equipped for directing Research in Biology.

Virginia Men Receive Appointments in Medical Corps.

Announcement has been made of the appointment of Dr. E. T. Trice, of Richmond, as major with the Medical Corps, U. S. Army, and Dr. Reid White, Jr., Lexington, as first lieutenant with the Medical Corps.

Goes Into Health Work.

Dr. Dwight Rivers, of Lynchburg, Va., has accepted the position as Assistant Director of the Southside Health District, Farmville, Va. After returning from France where he served as Medical Officer in the World War, Dr. Rivers did post-graduate work in pediatrics and practiced that specialty in Lynchburg until October 1st when he assumed the duties of his new position in public health work.

Dr. Lula W. Garst,

Catawba Sanatorium, Va., is on a leave of absence for the winter months and is studying in the Department of Medicine at Johns Hopkins University, Baltimore, Md., specializing in gastro-enterology.

Dr. Llewellyn Powell,

Alexandria, Va., who recently underwent an operation for removal of the gall-bladder at the Emergency Hospital, Washington, D. C., expects to be back at work early in November. We understand that Dr. Powell took spinal anesthesia and watched his operation.

Dr. A. S. Hurt, Jr.,

Of the class of '26, University of Virginia, following which he interned at Stuart Circle Hospital, Richmond, has located in Richmond, with offices in West End Medical Building, 2618 Grove Avenue. He is specializing in pediatrics, the subject in which he had a fellowship at Mayo Clinic for sometime.

The American Roentgen-ray Society,

At its annual meeting held in Atlantic City in September, installed Dr. Leopold Jaches, of New York, as president, and Dr. William A. Evans, Detroit, was made president-elect. Dr. Eugene P. Pendergrass, is secretary of this Society. The next annual session will be held in Detroit.

Dr. U. W. Massie,

Of the class of '30, Medical College of Virginia, who located in Fincastle, Va., after completing his internship at Lewis Gale Hospital, Roanoke, Va., is now in Bluefield, W. Va., at the N. & W. Railway Y. M. C. A.

Dr. Alpheus H. Wood,

Of the class of '27, Medical College of Virginia, who formerly practiced at Emporia, Va., is now connected with the medical staff at Catawba Sanatorium, Va.

Dr. William F. Hatcher

Announces that he has moved his offices from Bacova, Va., to Hot Springs, Va., where he will continue in general practice.

Married.

Dr. James Bannister Stone and Miss Janet Watkins, both of Richmond, Va., November 3rd.

Dr. Clabe Webster Lynn and Miss Grace Lunsford Friend, both of Petersburg, Va., October 17th.

Dr. Frazier Clyde Bedsaul, Galax, Va., and Miss Rosamond Vaughan, Spring Valley, Va., September 9th.

Dr. George Preston Nowlin, formerly of Lynchburg, Va., but now of Charlotte, N. C., and Miss Mary Ann Jones, of Lynchburg, Va., October 10th.

Dr. Edwin Foster Gouldman, Colonial Beach, Va., and Miss Margaret Reid, Washington, D. C., October 13th.

Dr. James Winston Watts, II, of the University of Chicago Hospital, Chicago, and Miss Julia Meem Harrison, Lynchburg, Va., in October. Dr. Watts was formerly of Lynchburg, and graduated from the University of Virginia in 1928.

Dr. Fred Y. Ketner, Concord, N. C., of the class of '28, Medical College of Virginia, and Miss Winnie D. Stokes, of Newsom, August 3rd.

An Appreciation of Dr. Matas.

The American Journal of Surgery has dedicated its October, 1931, issue to Dr. Rudolph Matas, eminent teacher and surgeon of New Orleans. It is known as the Matas Birthday Volume, commemorating "the close of five decades of his professional life as well as the attainment of the Biblical three score and ten."

It is stated that "this anniversary is a great epoch in his life as well as in the history of the medical profession of our country." The issue in question is a collection of surgical essays written in honor of Dr. Matas.

Dr. Clarence Porter Jones,

Newport News, Va., by invitation, gave a talk on "The Battle of Yorktown" before the Virginia Society, Sons of the American Revolution, at its meeting in Richmond, early in October.

The American Association of Obstetricians, Gynecologists and Abdominal Surgeons,

At its meeting at White Sulphur Springs, W. Va., recently, elected Dr. Walter T. Dannreuther, New York City, president for the ensuing year, and reelected Dr. Magnus A. Tate, Cincinnati, secretary. It was voted to hold the next meeting at French Lick Springs, Ind., in September, 1932.

Dr. H. McG. Robertson,

Medical Director in the U. S. Public Health Service, was transferred, October 1st, from the American Consulate at Glasgow, Scotland, and is at present in Washington, D. C. Dr. Robertson has been a member of the Medical Society of Virginia for a number of years.

Dr. Emmett H. Terrell,

Richmond, Va., was recently elected president of the William and Mary Club of this city, for the year beginning October.

Grace Hospital Unit.

Organization of the Grace Hospital Unit of the Organized Reserves was completed on October 15th, when all the vacancies in the professional services were filled by members of the hospital staff. The unit, which is officially, known as the Fifty-second Station Hospital, would be located at Fort Monroe in event of war. It would have facilities to care for 250 patients and would serve as a hospital for troops located in the vicinity. The unit is commanded by Dr. Nelson Mercer, Lieutenant-Colonel in the Medical Corps Reserve. The commissioned personnel of the unit is as follows: Dr. Alvah L. Herring, chief of the surgical service, with rank of Major, and Dr. Bruce L. Randolph, Dr. Thomas B. Washington, and Dr. R. Angus Nichols, Jr., as his assistants; Dr. Julius H. Hulcher, chief of the medical service, with rank of Major, and Dr. Thomas B. Pearman, Jr., Dr. William B. Morton, Dr. William L. Ball, and Dr. James L. Hamner as his assistants. Dr. Wyatt E. Roye is in charge of the laboratory service.

Obituary Record

Dr. Francis Page Nelson,

Crozet, Va., died suddenly, September 24th, of heart failure. He was born in 1886 and graduated from the Medical College of Virginia in 1914. Dr. Nelson was a member of the Medical Society of Virginia. During the World War, he served as a lieutenant in the medical corps. His wife and six children survive him.

Dr. John Blair Deaver,

Eminent Philadelphia surgeon, died at his home in Wyncote on September 25th. He had been suffering from anemia for some time and had undergone a number of blood transfusions. Dr. Deaver was 76 years of age and a graduate of the University of Pennsylvania School of Medicine in the class of '78. He was for many years chief surgeon at Lankenau Hospital and was emeritus professor of surgery at the University of Pennsylvania. Dr. Deaver was particularly known for his operations for appendicitis, of which he performed thousands. He was also widely known through his scientific writings, some of which were translated into other languages and became textbooks in medical and surgical schools. A son and two daughters survive him.

Dr. Dorsey Goodwin Tyler,

Formerly of Richmond, Va., died September 30th, at Oak Park, Ill. He was forty-two years of age and a graduate of the Medical College of Virginia in 1916. Dr. Tyler was formerly associated with Dr. Thomas Murrell, of Richmond. He was at one time a member of the Medical Society of Virginia. Two sons survive him.

Mrs. William L. Sohl.

Mr. Sohl, president of the Sulpho-Lithin Company, of New York, well-known to many of our readers, wishes us to advise his friends among our readers of the sudden death of his wife in the hospital, on September 18th. She was born in Northumberland County, Virginia, 69 years ago and they had been married forty-five years.

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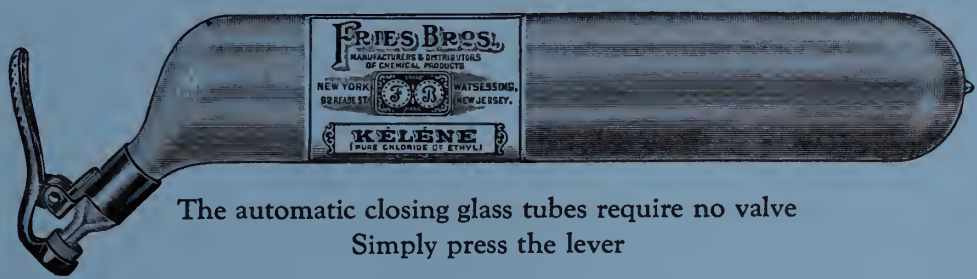

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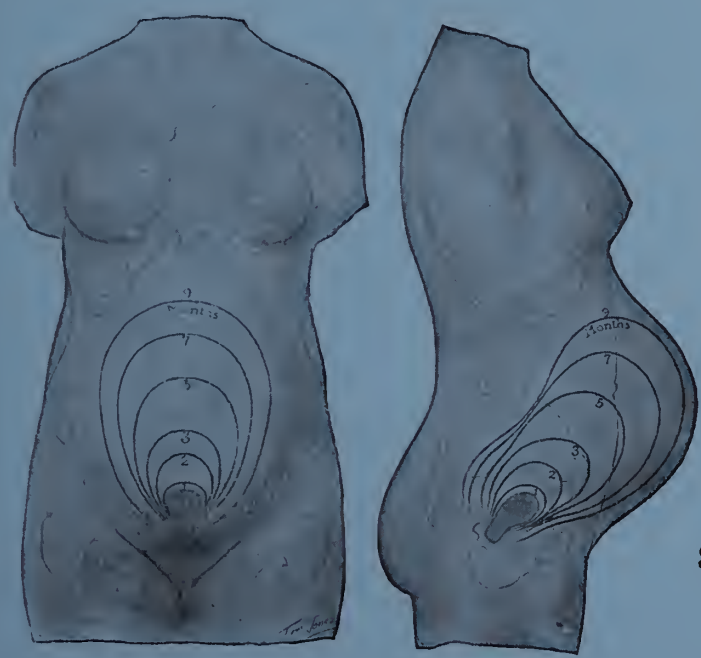

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Fat	3.00	7.3	1.4	1.3	4.0	10.5
Carbohydrate	71.80	66.2	76.3	53.1	5.0	—
Calories per oz.	109	110	103	74	20	42
Calcium	0.780	0.069	0.021	0.027	0.120	0.067
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	Grams	Prot.	Fat	Carb.	Cal.
2 teaspoons Knox Sparkling Gelatine	4.5	4	..	..	..
¼ cup cold water	..	..	..	..	..
½ cup hot water	..	..	..	..	..
½ teaspoon salt	..	..	..	..	..
¼ cup vinegar	..	..	..	..	..
1½ cups grated cheese	150	43	54	..	..
½ cup chopped stuffed olives	70	1	19	8	..
½ cup chopped celery	60	1	..	2	..
¼ cup chopped green pepper	25	..	..	1	..
⅓ cup cream, whipped	75	2	30	2	..
Total		51	103	13	1183
One serving		8.5	17	2	197

Soak gelatine in cold water. Bring hot water and salt to boil and dissolve gelatine in it. Add vinegar and set aside to chill. When nearly set, beat until frothy, fold in cheese, olives, celery, pepper and whipped cream. Turn into molds and chill until firm. Unmold on lettuce leaf and serve.

SPANISH CREAM *(Six Servings)*

	Grams	Prot.	Fat	Carb.	Cal.
1 tablespoon Knox Sparkling Gelatine	7	6	..	..	..
¼ cup cold water	..	..	..	..	..
1 cup milk	240	7	10	12	..
¾ cup boiling water	..	..	..	..	..
2 eggs	100	13	10.5	..	..
1½ teaspoons vanilla	..	..	..	..	..
Few grains salt	..	..	..	..	..
Total		26	20.5	12	336.5
One serving		4	3	2	56

Soak gelatine in cold water five minutes. Heat water and milk over boiling water, add gelatine and stir until dissolved. Separate eggs and beat yolks until lemon colored. Stir gelatine mixture slowly into egg yolks. Return to stove and cook over boiling water until mixture begins to thicken. Remove from stove, add vanilla and salt and chill. Beat egg whites until stiff and fold into jelly when almost set. Mold and chill until firm.

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RICHMOND, VA., DECEMBER, 1931

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VAGINAL HYSTERECTOMY FOR CANCER OF THE UTERUS.*

By J. SHELTON HORSLEY, M. D., Richmond, Va.

From the Surgical Department of St. Elizabeth's Hospital, Richmond, Va.

Incidence and Etiology of Cancer of the Fundus

According to statistics of the United States Bureau of Census, kindly obtained for me by Dr. Frederick L. Hoffman, consulting statistician of the Prudential Insurance Company of America, cancer of the uterus caused 13,702 deaths (11.8 per 100,000) in the United States in 1929, as against 9,848 (11.2 per 100,000) in 1920. While the number of deaths has markedly increased, the rate has changed but little. Cancer of the fundus or body of the uterus is reckoned by some as 10 per cent of all uterine cancers. Others give a lower percentage. It seems probable, however, that a careful examination of the specimens would show a larger percentage of cancer of the body of the uterus than is usually estimated. For cancer of the body of the uterus one of the chief etiologic factors seems to be fibroids, which are found in a large percentage of these cases. Taussig, for instance, in a communication from the Mayo Clinic (Ewing), places it at about 25 per cent. It is often found in women who have not borne children and, unlike cancer of the cervix, bears but little relation to chronic irritation. There does not appear to be much histologic difference between the virulence of the malignancy in cancer of the fundus and cancer of the cervix. The fact that cancer of the cervix is more rapidly fatal is due largely to its anatomical location, the abundance of the lymphatics which drain the cervix uteri, and the nearness of important viscera in front and behind.

The Technic of Vaginal Hysterectomy

At the meeting of the Medical Society of Virginia at Charlottesville, October 22-24, 1929, I read a paper on vaginal hysterectomy. A technic was described which in itself was not original, but consisted of a combination of features from different operations. The paper contained a report of sixty-six vaginal hysterectomies which had been performed from January 1, 1924, up to the time of the meeting. There was no operative mortality in the series. Eleven of the operations had been done for carcinoma of the uterus, including two for carcinoma of the cervix and one for chorioma.

The technic of the operation has not been altered from the description in the paper referred to, which was published in the Virginia Medical Monthly for April, 1930. The advantages of this type of vaginal hysterectomy were emphasized then and seem to hold good now. They include the disinfection and closure of the cervix; increased operative accessibility by an anterior longitudinal vaginal incision; delivery of the uterus through the vagina over an intact mucosa and skin, as against dragging it through the peritoneal cavity and abdominal incision in an abdominal hysterectomy; the obliteration of dead spaces and the close approximation of raw surfaces; and the drainage of the lymphatics of the broad ligaments toward the vagina instead of into the peritoneal cavity.

Discussion of Cases

In rechecking the cases, I find that one of them reported in October, 1929, as carcinoma of the fundus of the uterus, was probably not carcinoma but a marked hypertrophy of the endometrium. I have carefully studied the sections of all of these cases under the microscope a number of times, together with the histories and the gross specimens, and while in this case there are certain small areas that may bear the histologic interpretation of a mild adenocarcinoma, the redundancy of the endometrium in the fundus without actual ulceration or necrosis resembles too closely a type of hypertrophic endometritis to justify, in my opinion, a permanent classification of

*Read before the sixty-second annual meeting of the Medical Society of Virginia, at Roanoke, October 6-8, 1931.

this case as carcinoma of the fundus. It has, therefore, been classed as hypertrophic endometritis. The patient is now in good health, five and a half years after the vaginal hysterectomy.

This, then, makes ten cases of malignancy of the uterus from the first report, instead of eleven.

Since the meeting of October, 1929, until September 15, 1931, I have operated upon eight other cases of malignancy of the uterus, making a total of eighteen cases for this report.

The tables give a quick summary of the results. (Figures 1 and 2.) There has been no operative death, all of the patients leaving the hospital in good condition. Strange to say,

Table I

EIGHTEEN CASES OF MALIGNANCY OF THE UTERUS TREATED BY VAGINAL HYSTERECTOMY

Diagnosis	*No. of Cases*	*Ages*	*Operative Deaths.*
Adenocarcinoma of fundus of uterus	12	42, 49, 50, 51, 54, 54, 55, 58, 62, 63, 63, 70.	0
Squamous cell cancer of cervix uteri	4	46, 52, 63, 64.	0
Chorioma—(one chorio-adenoma; one syncytioma)	2	32, 41.	0

Fig. 1.

too, there has been no local recurrence of the malignancy, in any case, though each patient has been traced. One patient, Mrs. J. R. H. (Pathological No. 5750), died about five months after the operation with symptoms that seemed to indicate a cerebral tumor As she had been operated upon for carcinoma of the uterus, the possibility of a cerebral metastasis could not be denied, though no post mortem examination was made. Her physician, Dr. J. J. Anderson, and Dr. W. H. Higgins who saw the patient in consultation, found no evidence of any local recurrence of the cancer in the pelvis. I have studied the sections from the uterus several times. That the uterine growth was adenocarcinoma is evident, but it is also equally evident that it was not a virulent type and should be rated no higher than grade 2. It is extremely rare for carcinoma of the uterus to metastasize in the brain, certainly when there is no local recurrence in the pelvis, and it would be particularly unusual for carcinoma of the fundus of the uterus of no greater malignancy than grade 2 to metastasize elsewhere than in the pelvis or abdomen.

Accepting this case, however, as a possibility

Table II

RESULTS

	Ages of Patients
From 3 to 5 years, without recurrence—6.	
1 Chorioma	41
1 Squamous cell cancer, grade 3	63
1 Adenocarcinoma, grade 1	49
1 Adenocarcinoma, grade 2	58
2 Adenocarcinoma, grade 3	51, 62
From 1 to 3 years, without recurrence—6.	
1 Chorioma	32
1 Squamous cell cancer, grade 1	46
1 Squamous cell cancer, grade 2	64
1 Adenocarcinoma, grade 1	42
2 Adenocarcinoma, grade 3	63, 70
Under 1 year, without recurrence—5.	
1 Squamous cell cancer, grade 2	52
1 Adenocarcinoma, grade 1	54
3 Adenocarcinoma, grade 2	54, 55, 63

NOTE:—All the adenocarcinomas were of the fundus; all squamous cell cancers were of the cervix.

NOTE:—As explained in text, one patient, aged 50, adenocarcinoma, grade 2, died five months after operation with cerebral symptoms, but no evidence of pelvic recurrence.

Fig. 2.

of a metastasis, it would leave this series of eighteen cases with no local recurrence at present, and with only a possibility of a distant metastasis. Many of the patients have been operated upon too recently to say that they are cured, and yet the good results so far obtained appear to justify a report of this work, especially when compared with the treatment of uterine malignancy by other means.

CANCER OF THE CERVIX

I repeat here, as I stated in the paper previously referred to, that I do not as a rule treat carcinoma of the cervix by vaginal hysterectomy. If the carcinoma of the cervix is a fungating type, I prefer to amputate the cervix rather high with the electric cautery and implant radium or its emanations. If it is an excavating type of cancer with but little redundant tissue, radiation alone is used. In exceptional instances, vaginal hysterectomy has been done. Of the four cases of vaginal hysterectomy for cancer of the cervix here reported, two were high up in the cervical canal and not apparent at the os. When the uterus was removed it was seen that the cancer was at the upper limits of the cervical canal and of the squamous cell type. In another case (Miss M. B. G., Pathological No. 8928), after diagnostic curettage, a portion of the tissue that seemed most suspicious of malignancy was examined under frozen section; it showed very plainly a low grade squamous cell cancer with "pearls." The section was also examined by

Dr. John S. Horsley, Jr., and others. A vaginal hysterectomy was done, but on examining the gross specimen later, no evidence of cancer could be found, though there seemed to have been a slight inflammatory lesion in the upper cervix. Unfortunately the blocks for frozen section were lost, but the evidence of a mild degree of cancer was so obvious, not only to myself but to others, that this patient has been classified as a case of cancer of the cervix, grade 1. She was operated upon on March 17, 1930. The fourth case of cancer of the cervix was Mrs. I. C. (Pathological No. 7080), 63 years of age; and though limited to a small area on the cervix the cancer proved to be grade 3 histologically. The surface of the growth was thoroughly cauterized with the coagulation endotherm, and the cervix was closed by suturing over it healthy mucosa. Then a cuff of vaginal mucosa was outlined with the cutting endotherm knife and turned up, and the rest of the operation was proceeded with as usual.

Histologic Classification and Results

Classifying the cases histologically, four were squamous cell cancers of the cervix (one grade 1, two grade 2, and one grade 3); twelve were adenocarcinomas of the fundus (three grade 1, five grade 2, and four grade 3 or 3-plus); and two were choriomas. In the results we find that four patients are well and without recurrence after a period of four years or more, and two are well and without recurrence after a period of three to four years, making a total of six patients without recurrence for three years or longer. In this group one is a chorioma, one a squamous cell cancer grade 3, one an adenocarcinoma grade 1, one an adenocarcinoma grade 2, and two adenocarcinomas grade 3. (Figure 2.)

Three are well without recurrence from two to three years. One of them is a squamous cell cancer grade 2, and the other two are adenocarcinoma grade 3 or 3-plus. There are three between one and two years without recurrence. One of them is a chorioma, one a spinous cell cancer of the cervix grade 1, and the other adenocarcinoma grade 1.

Five patients have been operated upon during the last year, one of them within the last month. Of course, no deductions as to the permanence of the cure can be made from such recent operations, though there is no recurrence now. One of them is a squamous cell cancer of the cervix grade 2, one adenocarcinoma grade 1, and the other three are adenocarcinomas grade 2.

If we accept as a basis of cure a minimum of three years, we find that there have been six patients operated upon more than three years ago without recurrence, and that the only case that has died, with any suspicion of metastasis, Mrs. J. R. H. (Pathological No. 5750), had adenocarcinoma grade 2 and died five months after operation with symptoms of a lesion of the brain without any evidence of local recurrence.

Early Cancer of the Fundus

I particularly wish to mention two recent cases as showing the early stages of carcinoma of the fundus that might not have been recognized solely by a diagnostic curettage. In one of them, Mrs. V. G. (Pathological No. 9563), age 63 years, who had had two children, there had been small amounts of leukorrhoeal discharge for eight months, and very slight vaginal bleeding which would last for a few days and then stop. The uterus was thoroughly

Fig. 3.—Uterus of Mrs. V. G. (Path. No. 9563). Note the small granular area, slightly infiltrating, near the cornu of the uterus. The rest of the endometrium was smooth. This area might have escaped diagnostic curettage. The drawing shows that a block has been taken from it for microscopic section.

curetted and cauterized with the endotherm and the cervix was also cauterized on January 6, 1931. The uterine scrapings showed no malignancy. She was re-admitted to the hospital April 15, 1931, complaining of slight vaginal bleeding at intervals. Two days later a vaginal hysterectomy was done according to the technic described. The tissues were contracted and firm, probably due to the previous thorough cauterization with the endotherm. In separating the uterus anteriorly the bladder was torn. It was sutured, but later there was a small leak which was readily closed on July 16th by a Marion Sims operation using silver wire.

This is the only case of carcinoma in which a vesico-vaginal fistula resulted, but it was easily repaired a few months later. It is perfectly useless to attempt to repair such a fistula until after the inflammatory reaction has subsided, which usually takes about two months.

The uterus was somewhat atrophied, measuring 9.5 x 4 x 2.5 cm., and contained a small fibroid about .75 cm. in diameter. In the right upper cornu a small granular, sharply limited mass about 2 cm. in diameter was found. The rest of the fundus of the uterus was smooth. (Figure 3.) Microscopic section showed adenocarcinoma, about grade 2. (Figure 4.)

Fig. 4.—Photomicrograph of the area shown in Fig. 3. There is a definite adenocarcinoma, about grade 2. It has a slight papillary arrangement. There is but very little stroma, but there are many mitotic figures. (X 140).

The second patient with very early cancer, Mrs. R.. M. H. (Pathological No. 9553), was 54 years of age and had had three children. Her last period was three years ago. She had had some leukorrhoea and one month before admission to the hospital she was operated upon by Dr. A. T. Finch at Chase City who removed a polyp from the cervix. A slight discharge tinged with blood continued, and Dr. Finch referred her to me. The cervix was congested and swollen and bled rather readily. May 2, 1931, a vaginal hysterectomy was done. The uterus measured 10.5 x 5 x 2.25 cm. There was one fibroid about 1 cm. in diameter on the anterior surface of the uterus

Fig. 5.—Uterus of Mrs. R. M. H. (Path. No. 9553). There is near the cornu a small circumscribed granular area which has infiltrated slightly into the uterine wall. There was no redundancy of the endometrium at any point. This small area of malignancy might also have escaped diagnostic curettage.

near the left cornu, and two still smaller fibroids on the uterine wall. In the fundus of the uterus, near the left cornu, was a well

circumscribed granular growth measuring 2 x 1 cm. It was fragile and had slightly infiltrated the uterine wall, though it was mostly superficial. In the rest of the fundus there was no redundancy of the endometrium. (Figure 5.) Microscopic examination showed adenocarcinoma grade 2. (Figure 6.)

These two cases are of particular importance because in both of them early carcinoma of the fundus was in a small patch of the endometrium near the cornu and might easily have been overlooked even after a diagnostic curettage. They are also interesting in showing that in both cases there were small fibroids

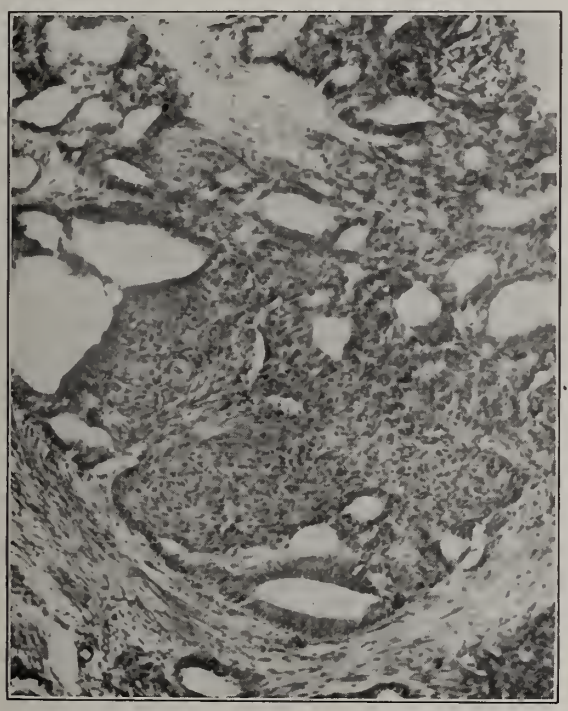

Fig. 6.—Photomicrograph of area shown in Fig. 5. There is definite adenocarcinoma of moderate malignancy, about grade 2. (X 140).

in the uterus. Fibroids of the uterus seem to be one of the chief causes of cancer of the fundus, though it apparently does not affect cancer of the cervix. In neither of these two cases was a definite diagnosis of cancer of the fundus made before operation. These two patients, however, had passed the menopause and had been operated upon previously without marked relief of the discharge and bleeding. It seemed illogical to repeat a procedure that had already failed, particularly when there was a suspicion of cancer.

It can be readily seen in these two early cases that the application of radium would have been a haphazard procedure. It would have been merely by chance that the radium could have been placed in such accurate juxtaposition to the malignant growth that it would have been effective in a cure. If, then, by proper preparation and a carefully carried out technic the mortality rate of vaginal hysterectomy can be reduced to a very low figure and the rate of recurrence can be greatly diminished, it seems logical to adopt this operation, not as a routine procedure in every case of mild bleeding or vaginal discharge in a woman past the menopause, but after trying unsuccessfully the simpler measures of curettage and cauterization or an application of radium. If the symptoms are more obvious and the discharge constant, or if the diagnostic curettage shows cancer of the fundus, a vaginal hysterectomy should be done at once.

Chorioma

In this list are two cases of chorioma. This neoplasm has been carefully studied by Ewing, who has adopted the name chorioma instead of chorio-epithelioma, deciduoma malignum, etc. Ewing (Neoplastic Diseases, pub. by W. B. Saunders Co., Philadelphia, 3rd ed., pp. 608-623) subdivides this neoplasm into three classes: (1), chorio-adenoma; (2) chorio-carcinoma; and (3) syncytioma. There are also cases between these classifications that do not accurately fit into any one of the classifications. Histologically, chorio-carcinoma is the only malignant subdivision of these growths. Here both the cells of Langhans and the syncytial masses grow rapidly with no definite core or stroma. According to Curtis and Oui (quoted by Ewing), 181 cases of chorioma of all types were operated upon between 1903 and 1912, with seventeen operative deaths. Ewing has been unable to find any record of operative cure in a chorio-carcinoma. Metastases in this type are rapid and fatal.

It seems to have been well established that chorionic villi and some portions of the syncytium become displaced into the veins and grow, even when the tissue is histologically benign. Dunger (Ewing) has reported instances in which, after violent labor, portions of the normal chorionic villi including the stroma have been lodged in the pulmonary and pelvic vessels. They may proliferate for a while but quickly degenerate unless malignancy arises. It is, however, a question whether it is pos-

sible that a malignant chorioma may arise from a transported benign chorionic villus, just as a malignant chorioma may arise from the chorionic villi in the uterus.

Neither of the two cases of chorioma reported here is histologically malignant, but clinically this type of lesion usually pursues a fatal course, from hemorrhage or sepsis, unless there is operative interference, so for practical purposes they are included in this report. Chorio-adenoma may penetrate the uterus and cause peritonitis.

In one of these patients (Mrs. G. B. W., Pathological No. 9057), age 32 years, the uterus was much enlarged and measured 12.5 x 6 x 5 cm. There was probably an abortion about five weeks before the operation. She had been curetted carefully, but the bleeding was not permanently checked. Vaginal hysterectomy was done June 6, 1930. The uterus was large and boggy and showed on the right side a mass 3.5 x 1.5 cm. that was infiltrating deep into the uterus. The microscopic examination showed marked proliferation of syncytium and so-called wandering giant cells from the syncytium. There were also columns of cells which seemed to be the cells of Langhans.

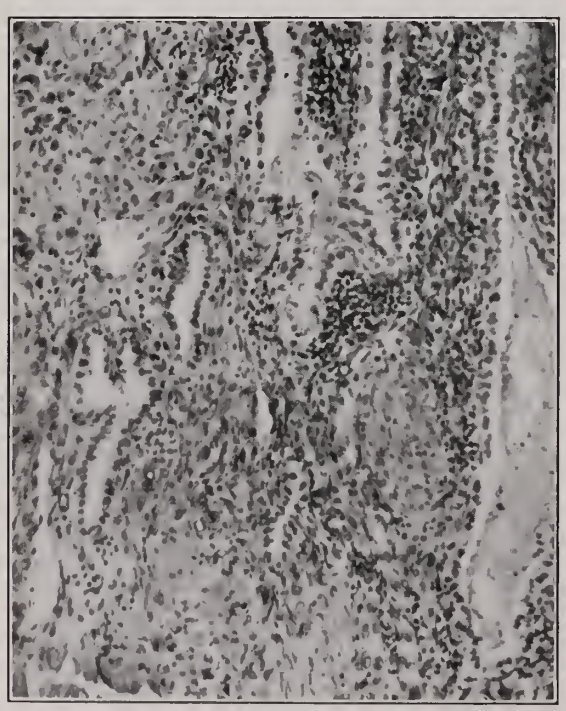

Fig. 7.—Photomicrograph of choric-adenoma of Mrs. G. B. W. (Path. No. 9057), age 32. The section is from near the surface of the growth and shows the cells of Langhans arranged as acini with some syncytial tissue and leukocytic infiltration. (X 150).

In some instances they appeared to be arranged as acini. Deeper in the tissue the wandering type of cells and syncytium were very obvious. The growth was quite vascular. It appears to be chorio-adenoma. (Figures 7 and 8.)

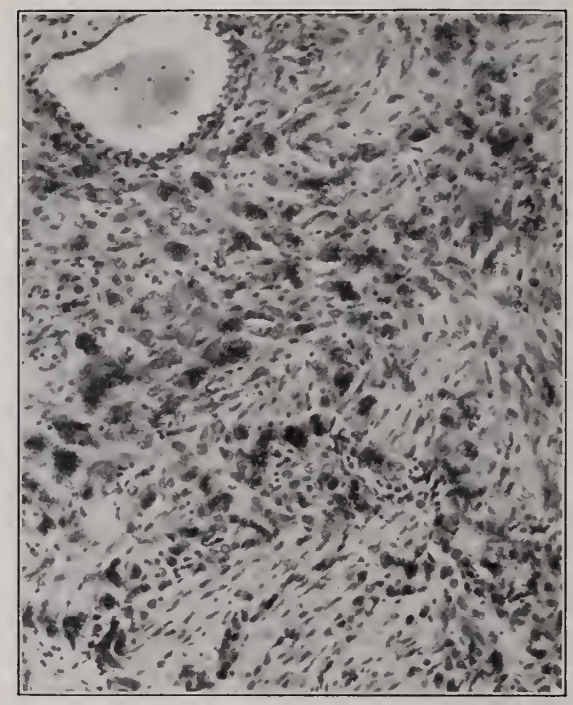

Fig. 8.—Photomicrograph of another area of Mrs. G. B. W., deeper in. It shows so-called wandering syncytial cells, but the cells of Langhans have apparently not penetrated so deeply. (X 150).

In the other case (Mrs. R. E. M., Pathological No. 6399), age 41 years, because of persistent bleeding the uterus had been curetted and cauterized by me one month previous to the vaginal hysterectomy. There was one child fourteen years old. The menstruation had been regular until a month before the curettage, when a rather profuse flow with passage of blood clots occurred and continued intermittently without regard to menstruation. There was no distinct evidence of a miscarriage. The bleeding returned after the curettage, was intermittent for a while and gradually became more profuse. She returned to the hospital and a vaginal hysterectomy was done May 10, 1927. There was a sharply excavating ulcerated area just at the upper limits of the cervix. This was covered with granulation tissue and the histologic section showed many large giant cells of the foreign body variety. Deeper in there were some remnants of syncytial tissue as shown by a few large

cells, but most of this tissue consisted largely of blood vessels and of stroma in which there was much brown blood pigment deposited. Some of the blood vessels contained cells having rather large nuclei with clear cytoplasm. Most of the blood vessels, however, were free. It seems to be probably a remnant of an old syncytial process in which granulation tissue has taken part and the vessels have multiplied. There is no distinct evidence of the cells of Langhans. This appears to be a form of syncytioma, a subdivision of chorioma (Ewing).

Conclusion

Whatever may be the eventual results in the cases of this report, at present there are six three-year cures including three cases of a very high degree of virulence histologically, (Fig. 9), with eleven cases varying from a few

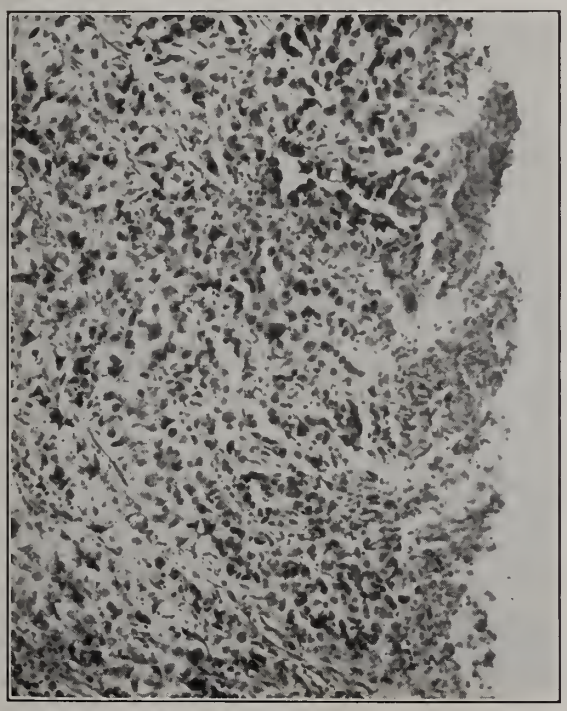

Fig. 9.—Photomicrograph of Miss L. W. (Path. No. 6241). The histologic structure is that of a very malignant type of adenocarcinoma. The cells are poorly differentiated and show a grade of malignancy that may be rated at least 3-plus. This patient was operated upon on March 2, 1927, and is now free from recurrence. This section may be compared with Figs. 4 and 6, showing milder types of adenocarcinoma. (X 140).

weeks to three years without recurrence, and only one patient of the whole series in whom there was even a possibility of a death from cerebral metastasis, but with no local recurrence in this case. There was no operative death. It is entirely probable that later there will be recurrences in some of these patients but so far the treatment by this method of vaginal hysterectomy has produced so much better results in cancer of the fundus of the uterus than any other method with which I am acquainted, that it seems to justify a degree of enthusiasm.

THE RELATIONSHIP OF GENERAL AND SPECIALIZED MEDICAL PRACTICE.*

By ELBYRNE G. GILL, M. D., Roanoke, Va.

I wish to express to you my sincere appreciation for the honor you have conferred upon me in electing me President of your Society. I also want to take this opportunity to thank you for electing me to the office of Secretary-Treasurer for a period of ten years. I now have had the privilege and honor of serving your Society in an official capacity for eleven years. During this time I have mingled in mind and touch with every member of the Society and I can say with all sincerity that the membership of our Society, from the viewpoint of individual character, scientific endeavor and achievements is unsurpassed by any medical organization. During the past eleven years I have seen the Society grow from a membership of fifteen to its present membership of approximately two hundred. While serving as your Secretary, I worked with ten of your past Presidents, all of whom are living with the exception of Dr. S. S. Gale, of Roanoke, Va., who died in 1927. The remaining nine are present tonight and I am going to ask them to stand for a moment. It is indeed a rare privilege to have been intimately associated with these distinguished past Presidents. My work and association with them will ever linger as a pleasant and profitable memory.

I have chosen for my subject "The Relationship of General and Specialized Medical Practice." In the modern trend of medicine where, at present, the specialist is defined as one who "knows more and more about less and less" and the medical student as one who "knows less and less about more and more," does the general practitioner make the balance wheel?

The birth of medical specialism,[1] in its most constricted form, belongs to an early period of the world's history. The technic of Egyptian medical practice five centuries before the

*President's address before the Southwestern Virginia Medical Society at its meeting in Marion, September 24 and 25, 1931.

Christian Era, to quote from Colonel Garrisons "History of Medicine" is described by Herodotus, who wrote, "The art of medicine is divided among them: each physician applies himself to one disease only, and not more. All places abound in physicians: some physicians are for the eyes, others for the head, others for the teeth, others for the intestines and others for internal disorders." It would be interesting to pursue this subject through the following centuries: the faults, the follies and vagaries of medical specialism—also at times its values. But time does not permit. We must confine ourselves to the period of our own medical activities during which specialism has been gradually forced into reasonable existence, because as James B. Herrick has said, "No man could hope to be a universal diagnostician."

Twenty odd years ago a distinguished English surgeon wrote: "The increase of knowledge, the elaboration of the means and methods of investigation, the more minute differentia of disease and of diagnosis, the complexity and potency for good or for evil of modern therapeutics, whether pharmaceutical or surgical, must eventuate in specialism of practice. This tendency is observable in the whole world of thought and opinion in philosophy as well as in physiology, in politics and economics, in architecture and in engineering, no less in medicine and surgery. But it behooves every enlightened member of the medical profession to take care that our specialization shall be the legitimate and reasoned outcome of the growth of knowledge."

The right to practice a specialty in the United States may be assumed by anyone after he has secured his doctor's degree and his license to practice medicine. In some of the countries of Europe one wishing to practice a specialty must first go before a lawfully constituted board of examiners which decides whether the applicant may or may not assume the title of specialist in the particular branch of medicine he wishes to practice. That some such requirement should be demanded of our specialists in the United States has been under discussion for several years. The American Board of Ophthalmic Examinations, the American Board of Otolaryngology and the American College of Surgeons are doing much and will do more as time goes on to establish standards of fitness to practice these specialties and to protect the public against unqualified specialists. The six weeks course which enables a doctor to proclaim himself a specialist is a thing of the past. The glamour which formerly surrounded the specialist is fast disappearing and no longer so liable to serve as a camouflage for incompetency. The public is becoming educated along medical lines as never before and more and more becoming competent to judge a specialist in the light of his real merit.

Admittedly, increasing specialization is a potent factor in the world's progress. But we must tread cautiously. Over production is a dangerous product. Lewis Mumford sounds a proper note when he writes that "Specialism (and he does not refer alone to medical specialization) leads inevitably to efficiency is a specious argument." "This argument," he continues, "takes no account of the mountains of useless arid work that are accumulated under our present habits of specialization, and it gives this practice the sole credit for gains which are due to quite another technic, namely; cooperative intercourse and association." Lord Moynihan wisely maintains: "A surgeon now master of structure must become master of function. He cannot do this alone; he must form a partnership with those who work in special lines, join with physiology, biochemistry, pharmacology." These and Lewis Mumford's words, cooperation and association, are everlastingly right.

The ophthalmologist, oto-rhino-laryngologist and dermatologist, first in the field of medical specialism, continue to be regarded as the chief exponents of specialized practice and yet whose work is more strictly specialized in the ordinary acceptation of this term than that of the neuro-surgeon, the orthopedist, the urologist, the gynecologist and psychiatrist. Our present highly developed and widely diversified specialities are in the main products of the last fifty years. Ophthalmology, fostered by the undoubted prevalence of eye diseases which had existed in Egypt throughout all the ages, was practiced before the time of Moses, indeed, thousands of years before Christ. We read in papyri devoted to the diseases of the eye that the ancient Egyptians had recognized many of the diseases known to modern medical science and had carefully classified them and minutely described their symptoms. One marvels at the knowledge of

these ancient physicians when he reads their description of the symptoms of diseases well known to modern oculists as iritis, trachoma, hypopyon, cataract, strabismus, chemosis, and many others. They were somewhat better in describing the symptoms than they were in treating the cause. However, they employed the salts of copper for trachoma and for a few other diseases treatment that would be acceptable today.

The renown of the ancient Egyptian oculist spread throughout the then known world. Even down to the time of Cyrus, King of Persia in the sixth century B. C., it had not dimmed. According to Herodotus, the mother of Cambyses was afflicted with senile cataract. Cambyses sent to Egypt imploring Amasis, the king, to send to his mother's aid the greatest of Egyptian oculists, and Nebenchari came and operated and restored her vision. It is interesting to note that out of this incident a war arose between Persia and Egypt, not a strange role for oculists play.

Had the ancient Greeks and Egyptians maintained the high standard to which they had brought medicine and its specialities, there would now be a different story to relate. The dark ages supervened and cast its blighting mantle over arts and science. During this period the belief that medicine was a divine art and a gift of the gods was universal. That the blighting influence of this belief has reached down even to our time is evidenced by the hundreds of people who have flocked to that arch charlatan in Roanoke who is reputed to cure all the aches and pains the flesh is heir to by simply laying on hands. Similar scenes are enacted in other states. What does the amazing growth of specialism in the past fifty years tell us? Does it mean that the practice of medicine will be wholly assumed by a multitude of specialists and that the general practitioner will have been completely submerged? Some think the general physician will be nothing more than a medical shop-walker whose occupation will be largely limited to the directing of patients to the proper specialist. There should be no doubt as to the position he holds in medical activities. He should hold now as he has in the past the position of commanding officer, as he alone is responsible for the preservation of cohesion and harmony in the forces marshaled against disease. This position is the keystone of the arch and should it be removed and the work distributed among numerous specialists, an intolerable confusion would follow and the best in medicine would be lost. The intimate relation which the family doctor holds to his patients over a long period of years gives him a knowledge which cannot be gained by any one else and the usefulness of which cannot be overestimated when he is called upon to treat them. The importance of this is aptly expressed by Dr. Oliver Wendell Holmes in his story "Elsie Venner" when Dr. Kitteridge says "I know these people about here, fathers and mothers and children and grandchildren, so as all the science in the world can't know them without it takes time about it, and sees them grow up and grow old and how the wear and tear of life comes to them. You can't tell a horse by driving him once, Mr. Langdon, nor a patient by talking half an hour with him." There should be no quarrel between the specialist and the general practitioner. The competent general physician should be able to treat successfully at least 80 per cent of those who consult him for medical treatment. It is not the growth of specialism that has made in-roads on the physician, but rather the growth of public knowledge along medical lines. "A slap and a promise" will not satisfy even the superficial observer.

The general practitioner of today is alert and thorough and, before referring his patients, he makes a careful physical examination to determine the basic and underlying conditions.

Each physician engaged in general medical or surgical practice must respect his own material, but in equal degree he must also respect the material and work of his colleagues, who specialize in single branches or departments. Not so commonly as formerly, but none the less only too frequently, one hears the phrase, sometimes almost scornfully expressed, "I know nothing about the eye, the ear, the skin, etc." This expression, not only stupid, may even be disastrous. What would be thought of the ophthalmologist, the oto-laryngologist, the dermatologist who proclaimed, "I know nothing about the heart, the blood vessels, the blood chemistry, the kidneys and the gastro-intestinal tract? What would happen to his patients if this be really true? Obviously, properly trained physicians in general prac-

tice must recognize the early indications of disorders which require attention from those qualified by special preparation to deal with them and also realize the need of special clinical examination to establish an exact diagnosis. Also, it is abundantly evident that among the patients who come under the care of special practitioners, many present disease manifestations incidental to general conditions, which require for their proper management consultation with those who are trained to detect and treat them. As the late Weir Mitchell was wont to say (for he was one of those who early in his outstanding career as a great "specialist" recognized the inestimable value of cooperation) "alone I cannot cure you, but I know the man, or men, with whose help I can" and to them he turned.

Cooperative work is the logical result of the manifest increase of properly organized specialism in medical practice, partly and chiefly because physicians of all types clearly appreciate its importance and partly because of the greater intelligence of patients who demand its employment and yet, even now, the old fear has not entirely disappeared that a request by the physician, be he specialized or general in his practice, for a consultation, or for cooperation in the management of his patient's localized or general disorder may create in the mind of his client the thought that he (the physician) lacks in competency. Just the reverse is the fact. de Schweinitz, the dean of American ophthalmologists, said, "In a rather long career I have never known an instance where properly secured help, properly given, has failed to create an additional bond of confidence between the patient and his physician." "Our doctor knew exactly where to send me for help in my cure" is an often repeated comment. I am sure I appeal for help to general practitioners and special practitioners quite as often as I am appealed to by them.

It might not be amiss to say a word about the ethics of the cooperative system of medical practice. Should the specialist, and to be concise, the ophthalmologist, in his routine work discover an eye ground lesion indicating a general malady, although the reference was for the correction of refractive error, and report the same, it is surely incumbent on the practitioner to investigate, and not to be offended, and moreover, to investigate honestly and thoroughly, and, if his facilities for laboratory work are limited, to obtain the help which his equipment lacks and report in his turn the results obtained. If the patient was not referred, the specialist should ask the name of the family physician and cooperate rather than try to refer the patient to another physician who may be a personal friend or a member of his particular hospital staff. The same cooperation is expected from the general practitioner. This sort of cooperation is the very breath of our professional lives. Again, the general practitioner in referring patients should give or send with the patient a copy of his findings and state the specific problem to be solved, for instance, are there ocular conditions to account for headache, nausea, gastric disorders, insomnia, etc., or are there ocular indications of cardiovascular disease, renal affections, metabolic disturbances, etc.? The specialists report should be thorough and complete, never indictating the type of treatment or examination, but suggesting a "lead" wherever experience justifies. Benedict states that "the ophthalmologist can be of the greatest service to the internist by suggesting that he look for this or that because the eye indicates it and the indications otherwise may be absent" and this applies equally well to other specialities. Each general or special practitioner must approach the problem in a spirit of cooperation with the good of the patient as his paramount duty. If this rule is followed, neither will lose the respect of the other and both will enhance the confidence of the patient. Cooperative medical work must be conducted fairly and the success of it depends upon working "in perfect sympathy and uncontending equity."

In conclusion, I want to say again that the family physician will always occupy the position of commanding officer in our medical practice. He is the heir of all the ages, of Hippocrates and before him; with these he inhabits the main road on which the advance of medicine is journeying. It is his to travel on lines where he is nearer to the heart of humanity than any but his ancient ally, the minister of religion; like him he sees things and feels experiences known only to them and to the people in whose homes he knows of deeds of quiet heroism, of suffering borne in silence, of self-sacrifices, of many things never published to the world. He salutes with reverence the Spirit of Humanity, for he knows, because

he has seen, that Spirit is stronger than the pains and troubles of this mortal life; that there is nothing, not pain, nor hunger, nor weariness, nor the haunting dread of death and the Invisible, that the spirit of man will not surmount and find itself the conqueror, not once and now, but always and to the end.

BIBLIOGRAPHY

1. de Schweinitz, G. E.: Address before the Alpha Omega Alpha Honorary Fraternity, Philadelphia, Pa., June, 1931.

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THE DIAGNOSIS OF CANCER OF THE LARGE BOWEL.*

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If it were not for a belief in our ultimate understanding of the nature of malignant disease the profession of medicine would be scarcely tolerable for its practitioners. Only when such an understanding is attained can we begin, in any real sense, to control the disease. Methods of control will be of a totally unexpected nature and can scarcely be speculated upon. It is to those who are working close to the fundamental processes of life, upon the minutiae of phenomena taking place in the living cell, that we must look for a solution to the problem. It is hard to conceive how the ungoverned growth of the cell as seen in cancer can be entirely understood, and the variations from the normal stimulus resulting in such growth can be controlled, until the stimulus to the normal life of the cell is known. It is probable, therefore, that the biologist will ultimately take the important step in solving the riddle of cancer. Important for us now is the fact that we cannot wait for this denouement. There is no telling how long it will be deferred.

There remains for us, therefore, the often disheartening task of postponing, and perhaps preventing death from cancer through those therapeutic means by which cancer may be checked or, in some instances, destroyed, after it is already established. The application of these therapeutic means, which for the most part are included within the terms of surgery and radiotherapy, depends entirely on diagnosis. Of course, there are recognized associations between certain etiological factors and the appearance of cancer, such as, for instance, chronic irritations and the like. Except for what we can do through hygienic advice and the removal of so-called pre-cancerous lesions in avoiding such causal factors, it is well for us to appreciate that, in relation to the general problem of malignant disease, our efforts are confined to the minimization of the evil effects of the disease rather than directed towards its prevention.

With these truisms out of the way, we may revert to a subdivision of the subject, namely, the control of cancer in the large bowel. Inasmuch as the control of cancer, as we have said, depends on diagnosis, I will in general limit my remarks to that phase. The early diagnosis of carcinoma of the large bowel is of equal importance to the early diagnosis of cancer elsewhere; in fact on account of the relatively favorable nature of the tumors met with, an early diagnosis in this region is perhaps of even greater importance. Richardson[1] states that of those cases that survive operation, nearly 40 per cent are alive and free from recurrence at the end of five years. Jones[2] reports a three-year survival of 63 per cent of all operative cases. Miller,[3] on the other hand, reporting a series of 129 cases at Johns Hopkins Hospital, exclusive of cancer of the rectum, reports a five-year cure of 28 per cent of those surviving resection. In considering these figures he calls attention to the fact that most clinics report at least 15 to 20 per cent mortality from operative treatment. It is further to be remembered that none of the series is limited to early cases. Miller's conclusion from his figures is that cancer of the colon is not particularly favorable. On the other hand Richardson[4] may be quoted as follows: "These good features of cancer of the colon, the tendency to remain local, the accessibility of the regional lymphatics, the slow growth and the frequent presence of definite symptoms, obstructive in character, are stressed, because together they make the most favorable type of intra-abdominal cancer for cure, common to both sexes. Conviction as to the curability of a disease is the most important basis for earnest efforts in diagnosis."

It is conservative to say that with radical operative procedures undertaken in the early stages of the disease the chance of a five-year cure is certainly as great, if not greater, than other of the more common types of carcinoma,

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exclusive of those of the skin. We are, therefore, facing in this phase of the cancer problem a phase, the outlook of which is relatively bright.

The diagnosis of cancer of the large bowel must most often be concluded in the hospital, with the exception of those rectal tumors that are in reach of the finger or the proctoscope. The aspect that is important for us is the recognition of those symptoms and signs that will justify hospitalization of the patient to complete the diagnosis. Unfortunately many of the symptoms and signs at the onset of the disease are so close to phenomena that are considered normal variations in well-being, that the opportunity for diagnosis before more obvious symptoms have occurred is frequently missed.

This unfortunate event is reflected in statistics by the fact that the obstructing tumors, that is, those that cause definite, unmistakable, and frightening symptoms, have a better record of cure than do the non-obstructing tumors. Miller's figures[3] show that eleven of his thirteen five-year cures come from the group showing symptoms of chronic or acute obstruction. Although certain types of tumors of the large bowel tend to obstruct early, it is, of course, far from the ideal to bring the patients to the hospital for treatment with obstruction as the presenting symptom. What symptoms then must we bear in mind so that our cases can reach the surgeon early?

In thinking of cancer of the colon, we think of a group of classical symptoms, namely, intermittent abdominal cramps often associated with nausea and vomiting, alternating periods of diarrhea and constipation; blood and mucus in the stool; the observation by the patient of a lump in the abdomen; and lastly loss of weight and strength. Given this group of symptoms the diagnosis can almost be made without examination, although such conditions as actinomycosis and tuberculosis of the bowel must be considered. It is not to this full-blown picture that I need to direct your attention. Although occasionally obstruction may be actually the first abnormality that the patient has been aware of, yet in the vast majority of cases a careful history will show certain disturbances of which the patient has perhaps scarcely been aware.

The age incidence of this disease agrees fairly well with that of most epithelial malignancy. However, individual cases outside the age limit are not at all infrequent. In the University Hospital we have record of a case in a girl of twenty-three and I have seen a case in a boy of nineteen. The earliest recorded case is at three years.[5] It is, therefore, wise not to put too much weight on the age factor in diagnosis.

Probably the most constant early symptom of cancer of the colon and rectum is a change in the bowel habits. The patient who has been perfectly regular, with a daily defecation, may present a history of constipation unexplained by changes in food or activity, or the patient may undergo a change from a constipated or a regular habit to one of more frequent defecations, possibly, as in the full-blown syndrome, alternating with periods of constipation. Of course, it is too much to suggest that any patient showing these symptoms should be hospitalized for diagnosis. Such variations from the normal without known pathological significance are common. It is not too much to suggest that the history of a patient presenting such symptoms should be most carefully taken and that in the physical examination certain things should be sought for.

Other early symptoms that these patients may show are, in the first place, a vague sense of discomfort in the lower abdomen. Jones and Hayden[5] feel that the localization of this discomfort is of great significance, that it is rarely felt above the umbilicus.

In the second place the occurrence of an increased amount of gas in the intestines is also frequent. Difficulty in relieving this condition by passing flatus and an increase in discomfort are associated.

In the third place, blood in the stool is often reported. The interpretation of the finding of blood in the feces deserves a word or two of comment. In a cancer in the left half of the tract, below where the stool is formed, blood is apt to be on the surface. It is quite possible, therefore, to obtain a laboratory report showing a negative benzidine reaction when blood is actually present. This is due, of course, to the fact that the sample on which the examination was made was from the interior of the stool. With tumors higher up, of course, it is important to get the samples from within the stool. In other words before accepting a report "negative benzidine,"

one must know whether or not all portions of the stool were thoroughly mixed and widely sampled. Further remarks on the significance of blood in the stool will be made later.

Lastly, with tumors in the right side of the colon, the presenting symptoms may be those associated with anemia. Carcinoma of the cecum is much less frequently obstructive than carcinoma on the left side of the abdomen. Furthermore, carcinoma of the right colon is almost invariably accompanied by a high degree of anemia with a blood picture often very close to that of pernicious anemia. The mechanism of this phenomenon is variably explained. Most observers agree that it is not due to excessive bleeding. A widely accepted viewpoint, which Horsley[6] among others has expressed, is that the toxins of tumor growth and ulceration are discharged into the bowel at a point where absorption is still going on; that anemia is the result of the consequent toxemia. Another and perhaps an equally probable explanation is based on recent studies of anemia in general. It has been found that there are definite nutritional anemias that can be entirely relieved by dietary alterations. These anemias are frequently of a type resembling pernicious anemia, and, therefore, resembling the anemias that may occur with right-sided cancer of the colon. It has, therefore, been suggested that the irritability of the bowel resulting from the presence of the tumor, results in turn in disturbances of absorption of the food. This abnormality of absorption corresponds to a malnutrition due to faulty intake. This idea, of course, is entirely an interesting speculation without proof. In connection with it, however, let me call attention to a recent case of multiple diverticula of the cecum associated with a similar type of anemia. One can imagine that the presence of the diverticula may have resulted in irritation not unlike that assumed in the presence of cancer. For our purpose one need remember only that anemia and weakness may be the symptoms that bring the patient to the physician.

I need not go in detail into the later symptom. Any individual who has had symptoms of obstruction is apt to consult a physician and the physician is apt to be impressed by the importance of the story. One need not stress the importance of investigating a mass in the abdomen. Frequent bleeding, tenesmus, mucus in the stool, are all obvious enough to demand no further remarks. Intentionally I make no reference to the so-called "ribbon stools"; these may be present in this disease, but their significance as a presenting symptom is slight.

To illustrate what type of initial symptom is presented by patients with known carcinoma of the large bowel, I have run through the University Hospital histories of seventeen unselected cases of cancer of the colon and rectum, of which ten were of the former and seven of the latter. Of the ten, six entered with symptoms of obstruction. Of these six, only one had suffered obstruction as the primary symptom. The other five showed symptoms as follows: First, slight constipation; second, sense of fullness with nausea after eating; third, constipation followed by irregularity in the bowels; fourth, diarrhea at varying periods with occasional blood in the stools; fifth, weakness, shortness of breath, loss of weight and black stools. Three cases came in with symptoms closely simulating those of acute appendicitis. In one of these the first attack had occurred a year before and many attacks had occurred since. She was sent in under a diagnosis of appendicitis with abscess on account of the history and the presence of a mass. The second had had six months of occasional pain and a sense of discomfort in the upper abdomen with the development of a mass which was taken to represent a hydrops of the gall-bladder. The third had had a typical attack of appendicitis two months previously with the discovery of a mass in the right side and blood in the stools three weeks later. The tenth case had had three months of diarrhea and cramp-like abdominal pain with bloody stools. This was the case mentioned earlier in a girl of twenty-three. On account of her age and an X-ray diagnosis of pulmonary tuberculosis, she was believed to have a tuberculous enteritis. She died in an attack of complete obstruction one month later.

Of the seven cases of carcinoma of the rectum, none presented with obstruction. The first symptoms noticed by two patients was a mass in the rectal region, in one of whom a diagnosis of hemorrhoids was made. In four of the cases the presenting symptom was either an habitual constipation followed by diarrhea, or the occurrence of constipation with a previous history of normal habits. These cases all showed blood in the stools, in some, be-

ginning at the onset of the change in bowel habits, in others, beginning many months later. One patient presented himself with the history of a desire to go to stool without resulting defecation, associated with pain in the small of the back.

This brief summary of symptoms is not meant in any sense to be statistical. It is presented solely to illustrate how in a run of average cases the presenting symptom is apt to be one on which the patient lays very little stress.

The discouraging element in any such series is the number of cases that have seen physicians who have laid equally little stress upon such symptoms. In the rush of a busy practice it is entirely natural and perhaps unavoidable. On the other hand it is often entirely inexcusable. There is one record among these cases, of a patient who presented herself to an excellent clinician with a history of chronic constipation for two years, associated with sharp pains in the left lower quadrant. There had been bloody mucus in the stool for two years. Two months previously the patient had passed something that resembled a worm. This patient apparently had had a very thorough examination including a gastric analysis and had been discharged with a diagnosis of hypochlorhydria and gastroptosis. In spite of otherwise adequate study she apparently had not had the benefit of a rectal examination, inasmuch as sixteen months later she came to the hospital with complete obstruction due to a carcinoma of the rectum readily felt about three inches above the anal orifice.

What then is the duty of the physician to the patient who has been suffering from such vague disturbances, the persistence of which has brought him for help? The very fact that they have persisted demands more than the casual advice as to diet, exercise and cathartics that one is tempted to give to the patient whose symptoms have been of brief duration.

In the first place, of course, an adequate physical examination is necessary with search particularly for signs of increased peristaltic activity, for the presence of tenderness or a mass in the abdomen, for enlargement of the liver. The tremendous importance of rectal examination and, in women, of vaginal examination, is illustrated by the case just cited. In that instance a rectal examination might have meant a life saved. In addition, one must search for other abnormalities as in any physical examination. The estimation of the hemoglobin and the red count must not be omitted. Specimens of the stools must be subjected to study for mucus and particularly for blood under the precautions already mentioned.

In addition to this the physician has at hand a simple method of diagnosis that can be carried out safely in the office, but that unfortunately is probably rarely employed by the man not in consulting practice, namely, the proctoscopic examination. The story of carcinoma of the rectum contains too many cases that have been previously operated upon for hemorrhoids on account of bleeding, when the rectal tumor was just beyond the reach of the finger. When one realizes that with careful handling, one can often visualize the mucosa of the large bowel as high as the pelvic brim, the possibilities within the scope of office diagnosis are seen to be tremendously enlarged. Furthermore, one can perhaps save the patient a trip to the hospital by the use of the proctoscope. If a normal mucosa is found, when mucus and blood are present in the stool, the probability of a local ulcerated lesion, deserving hospitalization, is strong. If, however, mucus and blood are found and the proctoscope reveals a diffusely ulcerated or inflamed mucosa, the possibility of carcinoma of the colon is rendered very slight. With the use of the proctoscope, in addition, one can not infrequently have the advantage of the biopsy, through the removal of projecting tags of tissue for microscopic examination. This method, however, must be used with caution on account of the danger of bleeding.

Except for positive findings in the stool and the presence of anemia in right-sided tumors, and except for what the exploring finger and the proctoscope may find in the rectum, one is not apt in early cases to increase or decrease one's suspicion of a cancer of the large bowel by physical examination. Occasionally, of course, particularly in thin individuals, a mass may be found in an early case. In the advanced cases, of course, mass, pattern and visible peristalsis will demand hospital care. In the vast majority of cases suspected of cancer of the large bowel, the diagnosis must be concluded by the X-ray, particularly in conjunction with the barium enema. Until more patients with the early

symptoms we have described are subjected to this examination, our recovery figures for carcinoma of the colon will not be greatly improved. I will not discuss the interpretation or the significance of X-ray findings, as they are otherwise covered in this symposium. Let me call your attention, however, to the fact that we cannot consider this or any other method of diagnosis infallible, that in a certain small percentage of cases the X-ray will fail to show the lesion.[1-5] In a much larger percentage of cases the X-ray cannot tell us whether we are dealing with a benign or malignant growth or an inflammatory lesion. The X-ray can tell us in these cases, however, that we are dealing with a localized lesion. This information justifies us in the final step of diagnosis, namely surgical exploration.

From this rather scattered discussion of the subject, it is clear that the early diagnosis of cancer of the large bowel, that is a diagnosis of cancer of the large bowel during the period when cure is within the realms of possibility, depends much more on the physician's analysis of the patient's symptoms than on any other factor. It is not easy to demand X-ray examination or hospitalization in the case of a patient whose only complaint is constipation and a little pain associated therewith. It is, however, an experience much more unpleasant to have the same patient come back a few months later with an inoperable cancer. If the physician has gone into the history carefully from all aspects, has done an adequate and careful physical examination, has investigated the degree of anemia and the content of the stool, and has completed a proctoscopic examination, if, after this, he still has nothing but the history to guide him, then the decision becomes even more difficult.

There are, perhaps, two main elements in the history that must guide his judgment. These are, first, a definite change that the patient himself has noted within a period of weeks or months, and, second, a persistence and troublesomeness of symptoms of a degree that has made the patient seek advice. The very fact that the patient comes to the physician with symptoms that are not unlike normal variations is of itself of the greatest significance.

The relation of certain other diseases of the colon and rectum to carcinoma needs brief consideration. I need not, perhaps, discuss in detail such conditions as appendicitis with chronic abscess, actinomycosis of the cecum or hyperplastic tuberculosis of the cecum. These, demonstrated by mass or X-ray or both, are sometimes indistinguishable by any pre-operative diagnostic means from carcinoma. In almost all instances they demand surgical attack, as localized lesions of the large bowel. Four conditions deserve more emphasis.

I have already mentioned the relationship of hemorrhoids to carcinoma of the large bowel. Hemorrhoids and fissure-in-ano are by vast odds the commonest causes of blood in the stool. In addition, through disturbance of sphincter action, they may be associated with alterations of bowel habit; and they may cause a profound anemia. They may, therefore, in themselves simulate the early symptoms of carcinoma of the colon. Furthermore the coincidence of hemorrhoids and cancer of the rectum is frequent. These facts are reflected in the number of hemorrhoidectomies that have preceded the diagnosis and treatment of carcinoma higher up. One cannot subject all cases of hemorrhoids to X-ray study of the colon. Cases with the slightest suggestion of obstructive symptoms, with loss of weight and strength, and particularly those cases that have had hemorrhoids for years with but recent development of other symptoms, should be so examined. One's judgment again must govern. It is important always to think of the possibility of carcinoma of the large bowel when a case of frank hemorrhoids presents. In the group of cases in which no thought of carcinoma has passed through the physician's mind, will occur those that return later with unmistakable cancer. It is not too much to demand that a study be made of the time of occurrence of bleeding and the location of the blood in the stool in all instances. If the blood is mixed with the stool it is not from hemorrhoids. If it precedes or follows the stool, it is probably from hemorrhoids. In addition every operation for hemorrhoids should be accompanied by a proctoscopic examination. And lastly, in any doubtful case the patient should be observed from time to time for persistence of symptoms following a successful hemorrhoidectomy.

Ulcerative colitis is a second condition that should be briefly mentioned. Fortunately the predilection for the recto-sigmoid of the lesions of this condition, put it within reach of

the proctoscope. As has been said above, blood and mucus occurring in the stool when the mucosa of the rectum is normal is not apt to be due to colitis.[2]

Third, one must mention diverticulitis. The differential diagnosis here lies not so much in the difficulty of ruling out by the X-ray the presence of diverticula, but rather in the presence of diverticula, of ruling out the concomitant presence of carcinoma. Diverticulosis is not uncommon: Rankin and Brown[7] place it at about 1 per cent of all individuals. Jones[8] states that 12 per cent to 15 per cent of all cases of diverticulosis suffer from diverticulitis and Rankin and Brown place the figure somewhat higher. Diverticulitis has been considered an important pre-cancerous state on the basis of early studies. Later studies show that the incidence of carcinoma in diverticulitis is extremely low. Spriggs and Marxer[9] report that in 100 cases of diverticulitis, the incidence of carcinoma was no higher than in the average of the hospital population. Fifield[10] reports fifty-two cases of diverticulitis among 218 cases of diverticulosis, without a single case of carcinoma. Rankin and Brown[7] in 1930, found an incidence of 1.7 per cent of cancer in 227 cases of diverticulitis. In 679 cases of cancer of the colon, only four were associated with diverticulitis. It is, therefore, obvious that the chance of carcinoma developing on diverticulitis has been much overrated. The X-ray may be of little help in ruling out early carcinoma when diverticulitis is found. Both Rankin[7] and Jones[8] call attention to the fact that the presence of bleeding in uncomplicated diverticulitis is extremely uncommon and must carry with it an assumption of cancer. Jones[8] says: "The occurrence of bleeding with diverticulitis is so rare that it is far safer to at least explore all cases of supposed diverticulitis with bleeding than to treat them medically." He says further: "There is no longer any reason for considering resection in cases of diverticulitis because of fear of the development of carcinoma. The more recent statistics indicate that cancer is associated with diverticulitis in from 1.7 per cent to 8 per cent, while the mortality from resection remains at from 12 per cent to 22 per cent."

The fourth disease of the colon to deserve special mention is diffuse polyposis. Here again the difficulty in diagnosis for our purposes lies in determining the coincident presence of cancer with multiple polyps, rather than in the diagnosis of polyposis. Here, however, the importance of this determination is statistically much greater than is the case with diverticulitis. The incidence of polyposis is much less than that of diverticulitis; but the cancer rate is much higher. Erdmann and Morris[11] state that cancerous degeneration has occurred in more than 40 per cent of reported cases. The symptoms of this disease may be exactly those of carcinoma of the colon, including even the symptoms of obstruction. Bleeding is the rule. An X-ray diagnosis of polyposis must be accepted with the thought in mind that there is nearly a 50 per cent chance of cancer being present. Therefore all cases of polyposis that are not too extensive should be explored. Richardson[1] says categorically that: "Adenomas, papillomas and localized polyposis should be excised when possible on account of the danger of cancer."

In conclusion, the surgeon must be guided in his decision on operation in suspected cancer of the large bowel by as complete an examination as is possible. In the obstructed patient, the obstruction, of course, becomes the primary element and surgical treatment is directed thereto. In the non-obstructed patient, no limitation of pertinent diagnostic measures should be recognized. In view of the fallibility of the X-ray, the surgeon must rarely, in cases that present troublesome symptoms, explore without a pre-operative diagnosis. A laparotomy with negative findings is preferable to a missed opportunity for radical cure of carcinoma. On the other hand, before coming to such a conclusion, the surgeon must be assured that the X-ray examination has been carried out by a competent roentgenologist, one with a wide experience in colonic diagnosis. It is not an easy field. There is probably no region subjected to X-ray examination in which experience is of greater importance than here.

Bibliography

1. Richardson, E. P.: Graham's "Surgical Diagnosis"—vol. II, p. 702, Philadelphia, 1930.
2. Jones, D. F.: "Carcinoma of the Rectum and Colon," *New England Journal of Medicine*, vol. 202, p. 162, January 23, 1930.
3. Miller, R. T., Jr.: "Cancer of the Colon," *Annals of Surgery*, vol. 78, p. 209, 1923.
4. Richardson, E. P.: "Diagnosis and Principles of Treatment of Carcinoma of the Colon," *New England Journal of Medicine*, vol. 203, p. 455, September 4, 1930.

5. Jones, D. F., and Hayden, E. P.: "Carcinoma of the Colon," *New England Journal of Medicine*, vol. 191, p. 471, September 11, 1924.
6. Horsley, J. S.: "Carcinoma of the Colon," *Journal of the American Medical Association*, vol. 93, p. 1372, November 2, 1929.
7. Rankin, F. W., and Brown, P. W.: "Diverticulitis of the Colon," *Surgery, Gynecology and Obstetrics*, vol. 50, p. 836, 1930.
8. Jones, D. F.: "Diverticulitis of the Colon: Its Relation to Carcinoma," *New England Journal of Medicine*, vol. 203, p. 459, September 4, 1930
9. Spriggs and Marxer: *Proceedings of the Royal Society of Medicine*, vol. 20, part 3, 1927. Quoted by Jones.[8]
10. Fifield, quoted by Jones.[8]
11. Erdmann, J. F., and Morris, J. H: "Polyposis of the Colon," *Surgery, Gynecology and Obstetrics*, vol. 40, p. 460, 1925.

CORONARY DISEASE AS A FACTOR IN FAILING HEART.*

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Twenty or twenty-five years ago, coronary disease was little more than the shadow of a pathological name. We knew or suspected that in some cases of angina pectoris the coronary vessels are diseased. For the clinician there was little else of interest. In 1911, for instance, Dr. Richard Cabot in one of his clinico-pathological conferences remarked that while the pathologist had reported, and correctly so, that the coronary vessels of the subject were definitely sclerosed, there had been no angina during life, no evidence of sclerosis of the peripheral vessels, and, therefore, the condition was of pathological interest only.

Even the symptom-complex called angina pectoris is not entirely established, so far as its invariable association with coronary disease is concerned. Granting that in most cases angina victims show coronary disease at autopsy, how can we explain, on the one hand, cases of angina that show no coronary changes, and, on the other, vessels with marked sclerotic changes and no history of heart pain? We shall not attempt to answer these questions. Suffice it to say that angina is still a riddle. Each year or so adds another hypothesis or two to the sixty-four that Huchard found in the literature of his day to explain this symptom-complex.

But, clinically speaking, we feel fairly confident of our ability to recognize these cases of simple angina, or "the angina of effort," as we are learning to speak of it.

Long ago, however, we realized that there are some cases of cardiac pain which do not run true to type. They differ from the usual angina case. The attack, for instance, may not depend upon effort, but may actually arise in deep sleep; the attack is not a matter of moments or minutes, but may last hours or even days; the pain is not relieved by nitroglycerine, nor probably by large doses of morphine. Only comparatively recently we learned that such variations, and others, from the typical attack of angina are real, and represent another clinical syndrome of the utmost importance in clinical medicine.

My object, therefore, is to discuss the growing conception of coronary disease as a factor in acute and chronic heart failure. I shall not attempt to relate chronologically the development of clinical knowledge of coronary disease. Rather, I shall follow the concept as it has developed in my own thinking and recognition of its place in cardiac disease.

For most of us our first conscious acquaintance with coronary disease, aside from simple angina, was on the occasion of a hurried call to a man of 45 years or older, who had been seized suddenly with the most agonizing, atrocious, demoralizing pain. This pain was centered, probably, in the precordial or substernal region, and radiated across the chest, up toward the shoulder or shoulders, or to the base of the neck, and was of a vise-like or oppressive quality.

Almost without exception the patient will say that never in his life before has he had such a pain, neither of the present severity, nor of the peculiar squeezing, throttling character. He will also say that the pain will kill him, or that he can never live through another like it. And yet the pulse rate and rhythm may not be materially altered. The blood pressure may not be affected. There may be no fever. Deep breathing, even free movement about the bed or room, does not influence the agony. In fact, there is a peculiar restless impulse to "walk off the pain." Nitroglycerine and ordinary doses of morphine have no ameliorating effect. If the patient lives long enough, we may give enormous doses of morphine, and watch the patient die with agony unrelieved, one to twenty-four hours after the initial seizure.

Or this first experience may have been even more puzzling, the diagnosis more doubtful, the issues of correct diagnosis more vital. The patient may insist that all of the pain is epi-

*Read before the Southwestern Virginia Medical Society at its meeting in Marion, September 24 and 25, 1931.

gastric or upper abdominal. He may have no pain about the precordium, chest, shoulders or arms. The upper abdomen may present the so-called "board-like" rigidity. Temperature may be subnormal, the pulse thready, pallor marked, the surface wet with sweat. There may be a degree of shock comparable with that of perforation. If the patient survives a few hours, he may develop fever and more or less leucocytosis. Herein lies a trap for the unwary surgeon.

To operate in such a case obviously invites catastrophe. To await further developments, in acute perforation for instance, may be equally disastrous. What is there in these cases to call attention to the heart? The surest protection is to bear constantly in mind the fact that cardiac pain can be referred to the upper abdomen just as certainly as abdominal pain can be referred to the precordium. It is just as important that the surgeon be able to think in terms of medical emergencies as it is that the doctor bear in mind the surgical emergencies.

When the patient is at middle age or beyond, the possibility of occult cardio-vascular disease should always be remembered. Hence, even in the face of what plainly seems to be an upper abdominal surgical emergency, the surgeon should make inquiry into past experience of precordial pain or shortness of breath, and especially whether either has been brought on by exertion or emotional stress.

It is always surprising how little we can bring out on direct examination of the heart in these cases, even when the situation is recognized or suspected. The heart sounds may seem feeble, as if heard from a great distance, or there may be some disturbance of the rhythm, and that may be all.

In some of these cases of doubt we are fortunate enough to be able to pick up a pericardial friction rub over the infarcted area. This discovery may be the first clue calling conscious attention to the heart. Unfortunately, the friction rub is often missing, because the infarction is not anteriorly placed.

Basal pulmonary rales are more constant. One should think twice before operating upon an older patient who admits shortness of breath on exertion and presents basal chest rales.

Then, too, sudden occlusion of a coronary vessel usually produces some change in the electrocardiographic tracing, when it is made early in the seizure. This change is oftenest inversion of the T-wave in one or more leads.

Buzzard, of London, remarked at one of the Post-Graduate Assemblies that heart pain can sometimes be differentiated from that of peritoneal irritation by the fact that in the latter, because of the irritation, there is an effort to fix, not only the abdominal muscles, but also the excursion of the lower thoracic wall. If, therefore, on applying the thumbs along the lower costal borders, and the patient takes a deep breath, there is a wide and equal flaring of the costal angle, no acute peritoneal irritation or inflammation exists.

The first several cases of coronary thrombosis we saw or recognized all died within a few hours. We believed the condition was uniformly fatal, and if recovery took place the diagnosis was in error. There came a time when an unmistakable case survived the initial shock, and the secondary fever and leucocytosis, only to develop after a few days or a week the signs and symptoms of ordinary congestive heart failure, with cyanosis and dyspnea, wet lungs, swollen liver and perhaps surface oedema. Usually, these patients also die in the course of one or a few weeks. Digitalis does not seem to catch hold of them as we expect it to do in the usual congestive case.

Or, perhaps, while still in this state of decompensation, or perhaps even while improving, several days, weeks, or months later, another attack of agonizing pain comes, in which the patient dies.

The next step in the recognition of the potentialities of coronary thrombosis was even more dramatic. Coronary occlusion can cause instantaneous death, without recognized premonitory evidence of heart disease, in full consciousness or in deep sleep, death so instantaneous that its victim does not change expression nor move a muscle. In fact, I believe that there is no death more sudden. I believe, also, that in practically every case in which the evidence points to instant death and there is no obvious cause or previous complaint, death is due to complete block of one of the main coronary arteries. In these cases the exact cause of death is probably ventricular flutter or cardiac arrest.

So far we have considered three types of cases, differing only in the length of time the disease takes to kill, whether instantly, or

within one to twenty-four hours, or perhaps a week or months later, with further attacks of pain, or with congestive heart failure.

Fortunately, there is a brighter side to the picture. Granting that coronary thrombosis with myocardial infarction is possibly the gravest non-traumatic insult the heart can receive, we are now able to state on the basis of general experience that not more than 50 per cent of these cases die in the immediate seizure or shortly thereafter. This estimate includes cases in which there is good evidence of occlusion of a large vessel at the time of the seizure, and in which at autopsy, perhaps years later, the size of the scar confirms the former clinical impression. Even so, in most cases the patient's cardiac reserve is definitely lowered; he will always be more or less of a heart patient.

Some patients seem to recover completely. Willius, of the Mayo Clinic, has recently published eight such cases, with one to three separate episodes of infarction, with and without secondary congestive heart failure. We have had at least two cases of undoubted severe occlusion, now apparently in good health. One of these cases is farming three and one-half years after the seizure, and one plays golf two years later, and neither shows evidence of cardiac embarrassment.

There is reason to believe that many cases of true coronary occlusion exist and recover without having been recognized. At least, it is not uncommon to find one or more old healed infarcts at routine autopsy. In many of these cases there is the history that in the more or less remote past the patient experienced one or more attacks of heart pain. Not uncommonly this pain was so slight and brief as to have been largely ignored, and eventually there seems to have been complete recovery from any cardiac disability that resulted. That such attacks, however trivial they may have seemed at the time, did represent actual occlusion is evidenced by the scar.

It is possible to conceive of the accident occurring in a vessel so small, resulting in infarction of an area so small, as to be attended with only minimal pain and disability. Doubtless, such experiences are far more common than we realize. If these cases be included in the 50 per cent which recover, it will not be a matter of surprise that so many do recover. Perhaps the percentage of recovery may be even larger.

At least, such cases serve the purpose of driving home the conviction that atrocious pain is not a necessary part of coronary disease, nor even of coronary thrombosis with infarction. Once having assimilated this fact, it is not a far jump to learn that there may be no pain at all. So we believe at present. All of the evidence may point toward simple myocardial failure, and the heart condition may be so construed.

For explanation of some of these clinical facts and deductions, we should call to mind the anatomy of the coronary vessels, and the pathology of sclerosis, thrombosis and infarction.

The coronary vascular system, anatomically considered, is one of the slender branches of the vascular tree. For a long time it was taught that there is no anastomosis between its branches. Now, while admitting the fact of anastomosis, relatively speaking anastomotic branches are few, vary much as between individuals, and, therefore, the establishment of a satisfactory blood supply by such detour is always precarious.

It is a physiological law of all muscle, to which the myocardium is no exception, that the more active the muscle or the more constant its function, the more abundant its blood supply must be. When the blood supply is materially lessened, healthy muscle tissue becomes replaced by tissue of lower grade. Muscle deprived of blood dies.

Strictly speaking, the trend of thought today is to attribute the harmful effects of a lessened blood supply to curtailment of the supply of oxygen. It is said to be the anoxemia rather than the ischemia of the myocardium that is of pathologic moment in coronary disease.

Be this distinction worth while or not, the fact remains that the factor that curtails the blood or oxygen supply of the myocardium is the process of sclerosis of the coronary vessels. Sclerosis leads to narrowing of the lumen of the vessel and restriction of the blood flow through it. Usually, when these changes set in, they progress to some extent throughout the entire coronary system. It is not exceptional, however, for either the right or the left main branch to be so grossly involved that, by comparison, the other branch seems to have es-

caped. In fact, it is curious how limited the process of arteriosclerosis can be, how one system or part of a system may be grossly sclerotic, and all or nearly all other vessels escape. Limited involvement seems particularly common in the coronary vessels. This explains the occurrence of occlusion out of a clear sky, as it were.

Practically speaking, occlusion is usually brought about through thrombosis. Thrombosis probably never occurs in a perfectly normal vessel. In instances where the seizure occurs in apparently perfect health, it must be assumed that there is a point of ulceration, or roughening, or an atheromatous patch within the lumen of the vessel, not sufficient of itself to produce symptoms, nor until a clot has been built up upon it.

The consequence of sudden complete occlusion of a coronary vessels is infarction of the area this vessel supplies. Temporary ischemia followed by venous hemorrhage, softening, separation of the muscle fibres, and necrosis, or aneurysmal pouching, perhaps perforation, of the ventricular wall, ensue. In case the victim lives and anastomosis is sufficient, the area of infarction goes through all the processes of tissue repair, ultimately to show a larger or smaller puckered scar of fibrous tissue.

But the occurrence of sudden and complete occlusion should be regarded more or less after the manner of an accident, or complication, superimposed upon sclerosis. Fundamentally, the process is sclerosis of the vessel, with gradual lessening of the blood supply to that part of the myocardium.

In other words, there are many more cases of coronary sclerosis with occult damage to the heart muscle than of thrombosis with infarction and instantaneous insult to the heart.

It is upon this thought that I want to place emphasis. It is my growing conviction that in a substantial number of myocardial patients the underlying factor is coronary disease. Coronary sclerosis leads to poor nutrition and oxidation of the myocardium, and this, in turn, is responsible for the myocardial degeneration. Hence, in any case of myocardial disease, not otherwise explained by the existence of the usual recognized causes, such as valvular disease, thyroid intoxication, hypertension, renal disease, etc., coronary disease may be the factor, whether there have been attacks of cardiac pain or not.

Clinically, such a process is characterized by all those signs and symptoms we are used to recognize under the term myocardial failure. Of course, it is well within the bounds of possibilities that at any moment complete occlusion of one of these narrowed vessels may occur, with any of the several denouements already set forth. Then pain may be expected. The pain is due to abrupt increase in the ischemia or anoxemia. Hence, it occurs when the occlusion becomes complete. It may also be caused by a sudden call upon the narrowed vessels to deliver more blood than they can to the starved myocardium under conditions of physical strain or emotional stress. But I want particularly to stress the fact that pain may be absent under other circumstances, and yet the condition may be progressive, the tenure of life precarious.

The importance of recognizing the coronary factor in myocardial failure is of more than academic interest, especially in the early case. I have the distinct impression that coronary sclerosis develops at an earlier average age than other scleroses. It is not exceptional to recognize it before there is any elevation of the blood pressure, or other evidence of vascular disease. It may be possible to do much to stay the progress of the disease.

In the event of occlusion, the indication is plain to put the patient to bed, with every exertion limited as far as it is humanly possible. The whole endeavor should be directed toward aiding Nature to summons her reparative forces. To aid in splinting the heart so far as that is possible, as well as for humane reasons, the patient should be given morphine, or other effective anodyne, to the point of comfort. Ordinarily, digitalis or other means of increasing the work of the heart is out of place. Should signs of congestive failure arise later, digitalis has its place, but caution should be exercised in its administration.

In the case of coronary sclerosis without occlusion, the management is the same, except for the necessity of pain-relieving measures.

When to allow the patient out of bed, and when to let him resume his former activities, if ever, must be more or less arbitrarily determined. It will be at least a matter of weeks, say four or six, before he should be allowed out of bed. Time should be given for the infarction to heal. All pain should have disappeared, and should not reappear on tenta-

tive prescription of bed exercises. All signs of myocardial decompensation should have cleared up. Finally, every effort should be so gradual and tentative that early signs of myocardial distress can be promptly recognized.

If electrocardiographic tracings have been made early after the accident, and if inversion of the T-wave or other aberration has been shown, the disappearance of these abnormalities is one of the most reliable bits of evidence that the lesion has healed.

It should not be necessary to add that this period of invalidism can well be used to make a complete study not only of the patient, but of the man in all of his relations. Sometimes we think the importance of focal infection has been exaggerated. I do not believe it can be overemphasized in this connection, especially with the earlier, younger patients. When the issue is potentially so grave, no compromise should be permitted. This remark applies as well to any other factor of ill health discoverable and removable.

I have the impression that most of the younger victims of coronary disease are either men who have been athletic and have continued strenuous competitive games too long, or are men whose mental make-up is of the driving sort, under constant urge, impetuous "go-getters." Hence, the man's habits, of eating and drinking, of work, rest and play, how he meets worries and responsibilities, are all subjects of inquiry, and, if faulty, of correction. He must learn to live on a lower plane of physical activity, and, as Dr. Osler used to say, "he must cultivate the habit of repose." Certainly, until months and years have passed uneventfully, the patient should stick close to his doctor.

George Ben Johnston Memorial Clinic.

ABDOMINAL EMERGENCIES.*

By M. H. TODD, M. D., Norfolk, Va.

One of the most serious and difficult problems that has to be faced by all of you who are in general practice is the question of abdominal emergencies. Upon you alone will rest the responsibility, on the one hand, of treating the patient medically, or, on the other hand, of calling in a surgeon. And upon your judgment in the matter, the patient's life may easily depend.

*Read before the Southside Virginia Medical Association at its meeting at Piedmont Sanatarium, at Burkeville, Va., September 8, 1931.

Most of these emergencies are not so hard to diagnose in the late stage; unfortunately, it is in the early stage that surgery must be done, and it is then that diagnosis is so hard to make. Surgeons often wonder why the family doctor is late in calling them in, for, by the time they see the patient, the diagnosis may be plain enough. I wish here to speak a word for the general physician, and to say that if the surgeon were to see the case in the early stage, he also would often enough be puzzled as to what to do. I say this because for ten years I was the surgeon in an isolated region, and my assistants had instructions to let me see all abdominal cases early; and I recall only too well my own difficulties in early diagnosis, and my own hesitation in knowing what to do.

Let me rapidly discuss the usual groups of abdominal emergencies, beginning with penetrating injuries, such as gunshot or stab wounds.

Penetrating Injuries: In a general way, these injuries will cause perforation of the intestines, although over the liver or the spleen this may not be the case. Even so, it is always wise to assume that intestinal injury has occurred. Such cases are always surgical, and are, in general, to be treated by operation.

Never forget that definite signs of intestinal injury do not appear at once, and that for some time the patient may complain very little, and his face may show no sign of distress. It is very important not to be misled by the mildness of his complaints. Typical signs of damage are late signs only, so that things like vomiting, severe pain and tenderness, spasm, rapid thready pulse, fever, distention, the Hippocratic expression of face, etc., must never be waited for. They indicate peritonitis, and give a very bad prognosis; whereas ordinary perforating wounds, treated early, may often be recovered from with no more trouble than interval operations for appendicitis.

I wish to mention here a sign that can be relied upon when the patient has been taken to the hospital, and which may occasionally determine the fact that operation is or is not necessary, namely, that when the intestine has been perforated, gas will always escape, and will collect between the liver and the diaphragm if the patient is made to sit up for a moment. An X-ray film will, in such

position, show a little clear line of gas above the liver, separating the diaphragm from it. This sign is practically pathognomonic of intestinal perforation. However, even if this sign is negative, operation may be demanded because of probable injury to other organs.

Injuries Without Penetration: In the case of injuries without penetration, as for instance, when a patient is run over, or kicked in the abdomen, there will be no doubt for a while as to what needs to be done. Here, again, the definite signs of injury may be late in appearing, the patient seeming to be very little hurt even when the intestine is ruptured; and here again, the X-ray, taken sitting, is an almost infallible way of determining intestinal injury. It is extremely important not to be misled by the fact that there may be only mild symptoms for a time. Early operation will usually, or often, mean recovery; late operation too often means death. Let me urge, therefore, that such cases demand early surgical consultation.

Emergencies, Not Traumatic

Let me now turn to the group of emergencies where no injury has been received,—perforated ulcer, intestinal obstruction, certain pelvic conditions, and rare diseases like acute pancreatitis. I am leaving acute appendicitis, which is by far the most frequent and most important emergency of all, to be discussed separately.

Perforation: Perforation of an ulcer, usually duodenal, may take place after a long history of indigestion. It must not be forgotten, however, that quite often there is no such history, and the patient will assert that his stomach is made of iron and will digest anything, so that a negative past history by no means rules out an ulcer.

The symptoms of perforation are usually clear enough, even in the early stage—violent pain or cramps, tenderness, rigidity which is board-like and which the patient cannot relax in the slightest, and vomiting. Such signs, whether or not they are localized, mean that laparotomy is imperative. Here, also, if any further sign is needful, the X-ray film will show a layer of gas above the liver, clinching the diagnosis.

It is appropriate to mention here the perforation that occasionally occurs in typhoid, adding to the discussion of this disease presented to you today at this meeting. Here, again, if the patient is having undue pain in his abdomen, and perforation is suspected, he may be held up sitting for a moment, when an X-ray, with a portable machine, will show the pathognomonic sign of perforation—gas above the liver. The other later signs of perforation, such as obliteration of the liver dulness on percussion, are far less delicate and far less reliable.

I cannot lay too much emphasis upon the extreme exactness of this diagnostic point, which can be determined very shortly after perforation of any sort has occurred, even within the hour. There is one exception; perforation of the appendix does not give this sign. I have discussed this matter in a previous article, to which I should like to refer you for case histories, etc.*

Obstruction: Intestinal obstruction is the abdominal emergency that I personally fear above all the others. The patient's symptoms are not clear at all for many hours. He often looks perfectly tranquil between his cramping pains, his bowels may respond several times to enemas, he may not be vomiting, there may be no distention for a long time, his pulse and temperature are unaltered, and his general appearance is deceptively good. Actual obstruction may hardly be suspected, and yet the penalty for delay in operating may be the patient's life. Nothing is more insidious and more deadly than the poison of obstructed intestines; and, to my mind, no serious condition is quite so hard to diagnose in its early stage.

One recent advance bids fair to clear up the problem; and here, again, it is the trusty X-ray film. Parenthetically, the more I see of the X-ray, the more thoroughly I respect the help it may give in all sorts of difficult diagnoses. A flat film, taken with the patient lying down, will show distention of the small intestines rather than gas in the colon; and, with the patient sitting, little separate horizontal levels of fluid will be shown in the small intestine, with gas above them. The latter appearance is almost pathognomonic, and, when clearly seen, makes laparotomy strongly advisable if not obligatory. The clearest description of this diagnostic point is given by Case, of Chicago.†

I cannot enter here into the question of what is to be done at operation.

*M. H. Todd, Amer. Jour. Surg., May, 1927. P. 449.
†Jas. T. Case, Am. J. Roent. & Rad. Ther., 1928, IX, p. 413.

Pelvic Conditions: You are aware that most diseases of the female pelvis are not classed as emergencies, and, indeed, are best treated in the quiescent stage if operation is to be done. There are, however, occasional pelvic emergencies, namely, ectopic pregnancy, and tumors with twisted pedicle.

Ectopic pregnancy may be discovered when bimanual palpation is done in a case of suspected abortion; or, again, it may simulate appendicitis; or, finally, there may be symptoms of rupture, with collapse. The picture is apt to be confusing; but if its possibility is remembered, diagnosis can quite often be made. It is not a common affection.

Tumors with twisted pedicle may sometimes be diagnosed by detecting the tumor; the symptoms are quite like those of acute appendicitis.

In either of these conditions, it is generally fairly evident that surgery is called for by some sort of emergency within the abdomen; exact diagnosis is often not possible.

Rarer emergencies, acute pancreatitis, gangrene of the gall-bladder, I only mention. Generally, here, the burden of diagnosis will be thrown on the surgeon, it being evident that the patient is not responding to medical measures.

Appendicitis: Appendicitis is a very common disease—by far and away the most common abdominal emergency. It is very dangerous; and each year it causes thousands of deaths, most of them in the prime of life. And yet it is the most certainly curable of any of our serious diseases. Those who are promptly operated upon get well, almost without exception, and indeed, they are often hardly sick after operation.

There are several points that I wish to emphasize; they were brought to my attention especially by a recent analysis of 200 of my own operative cases.

I want to lay particular stress upon the danger of delay in this condition. It is frequently not difficult to tell that the patient has appendicitis, and, indeed, he often makes his own diagnosis correctly; but there is no earthly way of telling how severe or how mild the attack may be. A gangrenous appendicitis may give only the mildest symptoms; it has actually happened to me not less than half a dozen times in this small series, while I have been sitting by the bedside of an apparently mild case, advising operation only to be on the safe side, that perforation has already occurred, as shown when I operated, without my suspecting it.

Furthermore, the fact that the patient has passed through other similar attacks in safety does not for a moment mean that the present attack will also get well. Delay is just as dangerous under these circumstances as in the primary attack. There is only one safe rule: when a patient apparently has appendicitis, whether mild or severe, appendectomy should be done promptly. The penalty for delay may easily be the patient's life. It is dangerous to delay; it is relatively safe to operate. I cannot emphasize this fact too strongly.

It is very important to remember one other fact: the symptoms of appendicitis are not always clear, and, indeed, the worst cases may give the most confusing signs. Any of the usual signs may be absent or unlocalized. There may be little pain, no nausea or fever, and no spasm; there is nearly always some tenderness over the appendix, but even this may be absent for many hours, or hardly localized at all.

When, therefore, a patient has cramps or pain in the abdomen that does not subside after a short time, appendicitis is to be suspected. An enema may be given, but neither sedatives nor laxatives; and, in my opinion, even the ice-bag is better left off. More than once it has led, in my experience to a deceptive comfort when gangrene was actually present. If symptoms continue, it is vital not to wait overnight, or to be influenced by the patient's convenience; a surgeon should be called at once. And I beg of you, do not delay simply because the patient happens to have no fever.

In this connection, you are aware that other conditions may give the signs of appendicitis; as a rule, these are also emergencies. Urinary stone, and rarely pneumonia, especially in children, may cause confusion. It is, of course, a mistake to operate in such a case. But I wish to say this, with emphasis: the penalty for operating when no acute surgical condition is there, is chagrin, and inconvenience to the patient; but the penalty for failing to operate, when severe appendicitis is really present, is death. This is never to be forgotten.

The doctor's position in the matter should be perfectly clear to the patient, when he suspects appendicitis. The disease is common and

dangerous; it sometimes gives confusing signs; delay is dangerous, operation relatively safe; and delay should be strictly against his advice.

Understand that I am here discussing only the early case. If it has unfortunately happened that the family physician is called to see the patient in a later stage, the problem may be different. I shall not enter here into this later problem, the question of treatment of appendix abscess, etc.; but a surgeon should certainly see the case at once, in consultation.

Summary

Abdominal emergencies due to injury will often give only mild symptoms even in the presence of serious damage. The late signs are typical enough, but they indicate peritonitis, and should never be awaited. The X-ray will often directly and surely make the diagnosis, and it should never be omitted when there is any doubt.

Perforation of an ulcer generally gives rise to pretty definite signs at once, and as a rule can be diagnosed; an X-ray, if necessary, will clinch the diagnosis. Intestinal obstruction gives obscure signs, and is difficult to diagnose early; the X-ray, again, will help enormously.

Appendicitis is a major problem; many people of prominence die with it, not alone those in rural communities; and this indicates that its danger is not even yet correctly appreciated. Death from appendicitis should be a rarity, not a commonplace. Only by prompt, early operation can the death rate be lowered.

712 *Botetourt Street.*

EUGENIC CONTROL AND ITS RELATIONSHIP TO THE SCIENCE OF LIFE AND REPRODUCTION.*

By J. H. BELL, M. D., Colony, Va.

I

The Origin of Life

No study of life, as it appears today, can be at all satisfying without some review of possible explanations of the origin of life; hence my apology for devoting a few moments to this aspect of the subject.

The origin of life on this planet is still somewhat densely obscured by the very remoteness of its beginning, but, here and there, science has been able to brush aside the veil sufficiently to permit a view of certain elemental things from which conclusions may be drawn. Thinking along the lines of an evolutionary and biological course eventually leads one to the concept of the origin of life at some remote age as a unicellular organism, and that this organism may have been formed from elemental chemical substances common to the new world. I am perfectly willing to believe with the theologian that a Master Personality breathed upon the clay, and thus brought life into being, for back of all concrete evidence of the how, when, and where of life there must always remain a mysterious force which is totally inexplicable.

It seems reasonably certain that neither at the present time, nor for millions of years, has any new life been produced upon this planet, but that all life is proceeding from antecedent forms. It is conjectural that during the early period of this planet's evolutionary development, temperature and moisture conditions were particularly favorable for the combination of elemental substances in such a way as to produce living matter, which since that time by evolutionary adaptation and adjustment to changing conditions has been able to reproduce itself. It seems quite plausible that the simplest forms of life now apparent are indeed quite highly evolved, and that back of this limit of our ability to penetrate, there may be a vast array of living matter which our senses have not yet been able to appreciate. If such be true, we have as yet but scratched the surface of a field of knowledge, which may be immensely productive in the future.

"All matter is subject to integration and disintegration, is acted upon by similar forces, is indestructible and the forces are persistent." These conclusions are forced upon us by proven chemico-physical laws and are the basis for all scientific investigation in this subject.

The nebular hypothesis of the origin of matter offers a fairly tenable theory and is perhaps the most widely accepted at the present time, as it appears to coincide more nearly with what is to be expected from known physico-chemical forces. According to the theory of Kant and LaPlace, space is filled with every conceivable form of matter, in every conceivable state of integration and disintegration, and the formation of a planet, or planetary system, is due to the concentration of matter in a highly gaseous state, which, revolving

*Read before the sixty-second annual meeting of the Medical Society of Virginia, at Roanoke, Va., October 6-8, 1931.

rapidly, condenses, passes into a liquid mass, and thence to semi-solid and solid states, cooling from the periphery inward, as in the case of the planet on which we live.

During the transition from gaseous to solid state, elemental substances appeared, which constituted the foundation of living matter as we know it today. These substances are confined to the surface of the planet in minute quantities as compared with the whole, and are subject to perpetual change; among the colloids of these substances, we find the proteins, and in the proteins, protoplasm consisting of O, H, C, N, S, and P, with certain fats and salts which constitute the basis of living matter. These proteins, building up into various complex forms through synthesis and casting off amounts in excess of their actual needs in the form of new living matter, pass through the various chemical and physical changes, which constitute the cycle of life.

II

The Science of Reproduction

We have stated that life perpetuates itself by throwing off assimilated matter in excess of its needs in the form of new life, and so it does by the process familiarly known to you as mitosis. Permit me to say, for the purpose of refreshing your memory, that this process carries with it certain obligations for faithful reproduction of certain physical characteristics and qualities of life which are met in the following manner,—the germ cells and sperm cells at maturation each pass through a preliminary cellular division known as heterotype mitosis, the chromatic substance in the nuclei appearing in pairs, and with the appearance of the spindle the chromosomes divide in halves, arranging themselves in such a pattern that the resulting two cells, when division is complete, receive only half the number of chromosomes of the original cell. In the ovum this is accomplished by extrusion of one-half of the chromosomes in the cast-off and physiologically functionless polar bodies; in the spermatocyte, by an equal division of the chromosomes in the two resulting cells. The cells are now ready for a second division, or homotype mitosis, and the outcome of this results in a functional ovum, three functionless polar bodies, and four spermatozoa all equally functional and containing the same number of chromosomes. The purpose of this process is apparently to maintain the same number of chromosomes to pass to the offspring as was in the parent cells and to permit an equal number of chromosomes from each mating cell to participate in the formation of a new individual. When fertilization takes place and the male pronucleus enters the female cell and fuses with the female nucleus, forming a new nucleus, the zygote possesses exactly the necessary number of chromosomes for the formation of the soma, such an arrangement being necessary for the perpetuation of a given species of uniform type and quality.

III

The Pattern of Inheritance

By inheritance we mean the transmission through blood lines of physical likeness and mental qualities which are predestined in the pattern of the cell, and investigation in the biological field for many years has finally culminated in the discovery of the fact that certain elements in the chromosomes are responsible for the faithful reappearance of parental qualities in the offspring. These elements may best be visualized as bulbous enlargements on the chromosomes, spaced at intervals, containing immense potentiality for the future individual and biologically known as genes. There are forty-eight chromosomes within the human cell, each chromosome receiving half of its genes from the male and half from the female cell, and, therefore, an equal number of genetic possibilities from each parent. When we take into consideration that there are from 5,000 to 8,000 genetic elements in the chromosomes of every reproductive human cell, the significance of the vast number of combinations that may be available is apparent. It is thought that new species arise suddenly rather than by a gradual process, this phenomenon having been observed in certain flowering plants, which bred true after the sudden variation. Such variations are known as mutations of the chromosomes. These sudden changes appear but rarely in the slow evolutionary process, but have been observed in a certain variety of primrose and in the Ancon sheep.

IV

Dominant and Recessive Transmission

We are concerned here with the science of life and reproduction, the structure, function, and organization of living forms, with the quality of human life, whether it be good or

bad, and it is this which is of primary importance in cellular transmission.

The genetic elements previously mentioned as being a part of the chromosome pattern are known to define, direct, and control the qualities of a given personality, and for the convenience of geneticists have been identified as dominant and recessive influences. The dominant is that factor in the genetic element which directs and governs the production of a normal individual with average intellectual equipment; the recessive, on the contrary, directs and governs the production of the subnormal or abnormal personality. The dominant is, therefore, normal; and the recessive, defective. The results produced by various combinations of matings will depend upon whether or not and in what proportion each parent may carry dominant or recessive strains in their chromosomes. When we recall that there are from 5,000 to 8,000 genes in the reproductive human cell, it is possible to understand how difficult it is to follow these influences through, isolate, and pin them down in the resulting individual. However, about thirty of these genes have been identified and followed through from parent to offspring in successive generations, examples of which are found in the hemophiliac, the feeble-minded, and the color-blind.

There are theoretically possible six different combinations in mating: *first*, the defective with the defective; *second*, the defective with a normal carrying a defective strain; *third*, two normals carrying a defective strain; *fourth*, a defective with a normal; *fifth*, a normal with a normal carrying a defective strain; *and sixth*, two normals.

In families of four offsprings the results to be expected might be as follows: *in one*, four frank defectives; *in two*, two frank defectives and two normals carrying a defective strain; *in three*, a normal, two normals carrying a defective strain, and a defective: *in four*, four normals carrying a defective strain; *in five*, two normals carrying a defective strain and two normals; *in six*, four normals. In each instance where defective strains are shown, the offspring is likely to breed back to a defective, depending upon the combination in mating—that is, whether or not the normal with a defective strain is mated with a dominant or a recessive,—and in each instance it may be conjectured that those listed as appearing normal but capable of transmitting recessive traits may, through unfavorable combination in mating, breed back to the frank defective in a certain proportion of their progeny.

V

The Growth of Eugenic Principles in Application to the Human Family

Practical eugenics in its application to the human family is not a new idea, it having been practiced amongst the Spartans and the Romans by prompt elimination of the defective one, methods for such radical procedure having been provided for in their civic laws, and the high perfection of these races at the height of their development is said to have been due to their rigid observance of the same.

There appears to be no very sound argument against the application of modern eugenical sterilization to the human family, and if the results are measured accurately and without controversial bias, one can but approve of a practice that seems to offer so much for racial improvement. Certainly the destruction of potentialities only cannot be conceived of as inflicting an injury upon a life that has never existed and might never exist irrespective of whether or not eugenical sterilization were performed. There is no impairment of the body economy, no functioning organ or gland removed, and individual life is, therefore, as complete as it would have been had not the function of procreation been interfered with.

A conception of the growth of eugenic ideas may best be brought to you by enumerating those States and foreign countries which have adopted eugenical sterilization as a part of their eugenic program. As of June 30, 1931, they were as follows: Alabama, Arizona, California, Connecticut, Delaware, Idaho, Iowa, Indiana, Kansas, Maine, Michigan, Minnesota, Mississippi, Montana, Nebraska, New Hampshire, North Carolina, North Dakota, Oklahoma, Oregon, South Dakota, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin—27 states,—the Kingdom of Denmark, one or more of the Cantons of Switzerland, and a Province of the Dominion of Canada. Quite an imposing list, and each year adds new converts to the fold! It is confidently expected that the matter will progress

much more rapidly in future years than in the past by reason of the fact that most of the missionary work has been done, the principle well established on firm moral and legal grounds, and the possibilities of good results practically demonstrated.

VI

Eugenic Control a Biological and Economical Necessity

The State is unable financially to segregate under institutional control during their reproductive period any but a small proportion of persons transmitting grave mental defects to their offspring. Only about 10 per cent of the epileptics and 5 per cent of the feeble-minded in this State are segregated in institutions at any one time. Segregation for eugenic purposes is immensely expensive, and in the series of 447 persons reported in this paper as eugenically sterilized at the State Colony for Epileptics and Feeble-minded, would have cost, in round numbers, about $2,000,000. Whereas, for eugenic purposes the same was accomplished with an expenditure of about $50,000, or $112.50 per patient for an average institutional, residence of six months, and in addition, such economic value as the individual may have had has been returned to the State and a defective line cut off forever. Statutes relating to the founding of the institution, and those enacted in its earlier years contemplated segregation from Society of the feeble-minded woman during the child-bearing period of life, and by such a method it would have been necessary to have maintained the majority of those reported in this paper at the expense of the State for a period of from twenty to thirty years, assuming that they were received between the ages of fifteen and twenty, which is usually the case.

By permitting the defective to wander at large in the community, unsterilized, we are rapidly building up a class of persons who cannot be fitted into even the lowest scale of the economic structure, and who must, therefore, be dependent upon relatives, charity, or the State. We are breeding extensively from the bottom of the social structure and with decreasing frequency from that point to the top, where it appears to be at a minimum. The best of our stock is, therefore, gravely threatened by an overwhelming horde of less desirable people. The threat of a widespread dissemination of defective protoplasm throughout the race, with a general lowering of our cultural and intellectual standards is not a phantom, and the law of natural selection, with the breeding out of defective strains through chance matings of dominants with recessives, will not take the place of eugenic control in this modern world. Had, or could, a few of the simple facts long known to eugenists and long applied in animal husbandry been applied to the human race, a few hundred years ago, I doubt not but that we would see a very superior human being on the earth today.

VII

Report of the 447 Persons Sterilized at the State Colony for Epileptics and Feeble-minded for the Purpose of Eugenic Control

Of the 447 persons sterilized at the State Colony for Epileptics and Feeble-minded for the purpose of eugenic control only ten remain in the institution, the others having been returned to their families or friends, minus the great menace to Society of their reproduction.

Mental levels in this series of cases ranged from a minimum mental age of four years to a maximum of eleven and one-half, and from a minimum chronological age of thirteen years to a maximum of thirty-seven. By far the larger majority, however, ranged in mental age from seven to nine years, and in chronological age from fifteen to twenty. Of this number 19 were epileptic females and 47 were epileptic males, a total of 66 epileptics; 309 were feeble-minded females and 72 feeble-minded males, a total of 381 feeble-minded; or, if estimated by the sex, 328 were females and 119 males.

As to the preponderance of the females, a word of explanation will suffice. More of them come to the institution than males by reason of the fact that they are more quickly apprehended by social agencies. There has been no disposition on our part to create this difference, it resulting from the fact that males of a suitable type for sterilization and release are able to evade serious contact with welfare agencies or local officials to a greater extent than the females. The epileptics, both male

and female, as a rule do not come to the institution until well advanced in mental deterioration, and are, therefore, not suitable cases for sterilization and parole. The female defective is, generally speaking, more dangerous eugenically than the male because she falls an easy prey to the sexual aggressions of males of superior intellect as well as to those of her own mental level. On the contrary, the feeble-minded male cannot enter into serious competition with the normal male for the affections of the normal female. It is, therefore, evident that if all mentally defective women were sterilized, there would be but little reproduction of feeble-minded persons from these sources.

The mortality in our series was in 119 males, none; in the 328 females, one. The death in this instance was due to an unrecognized status lymphaticus, resulting from an enlarged thymus gland observed at post-mortem.

The sterilization of the female, as practiced in the State Hospitals of Virginia, renders the individual immune to those devastating pelvic infections which frequently occur through the utero-fallopian route. In the male it permits the reabsorption of the testicular hormone, which theoretically should serve to strengthen the physical body, and in neither instance is the potency of the individual interfered with. The defective can, therefore, marry, following eugenical sterilization, without jeopardy to marital relationship, and with a much greater opportunity for independent existence in our economic structure than if the family had imposed upon it, in addition to its mental handicap, deficient and inadequate children.

VIII

A Glimpse at the Future of Eugenics

With the comparatively rapid spread of eugenic knowledge and principles within recent years, we may confidently prophesy a brilliant future for this one-time, cast-off daughter of science. The would-be benedict will, at a not distant day, inquire most carefully into the family history of the object of his affections, and the lady on her part will be equally as alert to determine that she is marrying into good racial stock. In the not too distant future marriage laws, having for their basis proven eugenic principles, will be enacted in all States and many foreign countries, and people generally will be keenly watchful to recognize and ward off eugenic disasters.

Eugenic sterilization, now the main hope for the elimination of defective stock, which has accumulated through ages of neglect, will be generally sought out by those who are so unfortunate as to carry within their lines defective strains.

The physician of the future will be an expert in preventive medicine and public health; he will be a teacher as well as a practitioner of medicine, and will concern himself as much with the eugenic problems of his patients as he now does with their physical ailments.

IX

A Practical Eugenical Program in the Furtherance of Which the Medical Profession Can Render Valuable Assistance

The medical profession, by reason of its special training and the opportunities afforded it through its daily, intimate contacts with society, occupies a particularly advantageous position for the broadcasting of eugenic knowledge.

Any well considered plan for the eugenic control of insanity, epilepsy, and mental deficiency, necessarily involves the working-out and putting into effect of a practical program. The six-point program suggested here is entirely feasible at the present level of our social consciousness.

The six points of this program are: first, *recognition;* second, *identification;* third, *registration;* fourth, *segregation;* fifth, *eugenic sterilization;* and, sixth, *parole* and *follow-up.*

To amplify further these headings: *first*, there must be a widespread recognition of the extent of these ailments and an appreciation of their damage to society; *second*, there must be identification of defective racial lines, and the medical profession can here render immensely important services by bringing to the attention of the authorities defective families that come under its observation; *third*, there should be registration by card index at the seat of the county or city governments of such families as are certified by the physicians in their communities to be actual or potential transmitters of mental diseases or defects to their offspring; *fourth*, would come the com-

mitment and temporary or permanent segregation, as the facts of the case might warrant, in appropriate institutions of the procreative members of such families as have been identified and certified as actual or potential transmitters of mental diseases or defects; *fifth*, the widespread practice in the institutions of eugenical sterilization, as provided for by eugenic laws; and, *sixth*, an adequate system of parole and followup in sterilized cases after their release from institutional custody, in order that as many as possible may be returned to community-life.

Such a program, if adopted and followed-through, would, in my opinion, be productive of immensely beneficial results within the period of two generations, and within a period of three to four generations would practically wipe out the more potential racial lines that are furnishing such a tremendous number of persons to our colonies, insane asylums, almshouses, and penal institutions.

X

Summary

Eugenics is now a well established science, with ample accomplishment behind it to insure its lusty growth in the future.

We have a problem which must be met, and eugenic control through *recognition*, *identification*, *registration*, *segregation*, *eugenical sterilization*, *parole and follow-up*, together with the broadcasting of eugenic knowledge to all classes of our people, is the practical answer.

We are afflicted with a social disease, and society has demanded and provided a social remedy, it being established as a principle in equity and through positive decisions in our superior courts that the State has a right and a duty to protect its citizens from an overwhelming horde of socially and economically inadequate persons.

Bibliography

Biology in Human Affairs: Edward M. East.
Biology, General and Medical: Joseph McFarland, M. D., Sc. D.
The Science of Life (Vols. 1 and 2): H. G. Wells, Julian Huxley, and G. P. Wells.

SCARLET FEVER ANTITOXIN IN THE TREATMENT OF SCARLET FEVER ARTHRITIS.*

By S. A. TUCK, M. D., Eggleston, Va.

Since Scarlet Fever Antitoxin has been made available, much has been written in the literature concerning its use. It is generally agreed that the mild cases do not need it, and when given to the moderately severe, or the severe cases, it should be given early in the disease, thus reducing the severity, and also the tendency to complications. But as suggested in the title of this paper, I will only consider the use of the antitoxin in the complications of the disease, especially that of arthritis, or scarlatinal rheumatism.

Woody points out that it is a fairly frequent complication, occurring in about 3 per cent of all cases, whether mild or severe, that it usually appears from the fourth to the ninth day, and that the earlier the appearance the more severe the rheumatism. It affects several joints at a time, usually the smaller ones of the fingers, wrist, ankles and knees.

The physical signs are the usual ones of acute rheumatism. Fever is most always present and may last for several days. Holt says that the condition rarely lasts more than three to four days, and that in most cases there is spontaneous recovery.

I wish to report three cases of scarlet fever complicated by rheumatism, in which the disease in each case was mild, but the antitoxin was given for the rheumatic condition.

Case 1.—Miss E. B., age 16, was seen May 10, 1926. She had had a mild case of scarlet fever for three days. When seen the following day the wrists, finger joints and ankle joints were swollen and painful. She was given one therapeutic dose of scarlet fever antitoxin at 10 A. M. The next day, May 12th, she said that the pain and swelling began to subside in about eight hours following injection of the antitoxin, and was entirely gone when I saw her twenty-six hours after the injection.

Case 2.—N. B., age 12, female, had had a mild scarlet fever rash for two days when seen May 13, 1926. It was thought that the disease was not severe enough to administer the antitoxin. When seen the following day, May 14th, the joints of the fingers, wrists, elbows and ankles were moderately swollen and tender. She was given one therapeutic dose of the antitoxin, and in twenty-four hours all symptoms of joint complications had disappeared.

Case 3.—Mrs. A. H., age 18, was seen April 22, 1926. She had had a mild case of scarlet

*Read before the Southwestern Virginia Medical Society at its meeting in Marion, September 24 and 25, 1931.

fever for twenty-four hours. The rash disappeared on April 28th, having lasted for one week. The following day, April 29th, the joints of the fingers, wrists and elbows were moderately swollen and tender. At this time she was given one therapeutic dose of antitoxin, and when seen thirty hours later all joint complications had disappeared. In this case as in the other two, the temperature raised from one to two degrees with the onset of joint complications, and returned to normal in about twenty-four hours after the administration of antitoxin.

In reporting these cases no claim is made that the antitoxin acts as well in the joint complications, as in the disease itself, for one would not be justified in drawing any conclusions from such a small number of cases, but in the light of these three cases one would seem justified in giving the antitoxin a further trial in these complications where control cases can be run, to see if it will shorten the time the condition lasts.

Correspondence

Accuracy in Birth Certificates Requested.

November 17, 1931.

To the Editor:

The Bureau of Vital Statistics solicits the aid of the physicians who report births, in the effort to make our birth certificates complete and accurate and thus legal records of actual importance and value for the future as well as for the present.

The particular point in question at this time is as to the given name of the child, and the correct spelling of the surname.

It is the name after all that constitutes a real record of birth and the thing of most value when any inquiry is made as to the record.

Many physicians omit the given name with such regularity, that we may reasonably infer that they do not make any inquiry of the parents as to the name selected, simply making up the certificate from bedside records which usually do not include the name, at least until about the close of his attendance.

While it is possible for our Bureau to secure the name from the parents in the majority of cases, it is necessarily done at considerable expense and delay. Some, from inability to write, and indifference, fail to respond to our inquiries, even when repeatedly made, and the child always remains as "unnamed" until the importance of the omission is brought home by an urgent demand for a birth certificate to collect war compensation, and for many other purposes.

We do not ask, however, that the report be delayed to another month, even if the child is unnamed. We prefer having it promptly, even though an additional burden is put upon our office.

Birth Rate Declining.

To the Editor:

The rapidly declining birth rate is becoming a matter of serious import, particularly as the loss is from the most favored portion of the population economically and socially.

It was hoped that the low-water mark was reached in 1930 when the year closed with 53,738 births reported through the December report on January 10, 1931.

The year 1931, however, seems to promise a loss of about 2,000 from that low mark, as shown below.

It will be noted, however, that deaths show an increase.

Births	
Through September, 1930	40,427
Through September, 1931	38,739
Decrease	1,688
Deaths	
Through September, 1931	22,848
Through September, 1930	22,588
Increase	260

W. A. Plecker, M. D.,
State Registrar.

Medical History.

West Point, Va.,
November 3, 1931.

To the Editor:

Our committee on Medical History in Virginia has done a fine and commendable piece of work in writing the book on Medicine in the Seventeenth Century and we who are interested in historical matters hope they will continue it for the next two centuries, bringing it up to date.

A few days ago with some friends I visited "Studley," the birthplace of Patrick Henry, and in the course of our visit went over to the old graveyard where we found one slab its legend nearly illegible, which after much effort we found to be to one Doctor Thomas

Chrystie, a native of Edinburgh, Scotland, and a surgeon in the American Army during the Revolution. The following is the legend as deciphered:

STONE IN GRAVEYARD AT STUDLEY

In Memory of
Doctor
THOMAS CHRYSTIE
who died 22 February 1812 aged 59 years
Born near Edinburgh Scotland
--------this----------Country
and during the Revolutionary War having
entered the American Army as a surgeon
distinguished himself for humanity skill
& assiduity in his professional duties
possessing a cultivated mind and a benevolent
disposition
he was a steady and valuable friend
and affectionate relative
and he left behind him memories irreproachable
long to be remembered by those
who knew his worth.

This is, of course, of slight historical importance, but it does impress us with the importance of preserving the few things that remain of our early history.

Our committee has asked for data from time to time. Why not include in our MONTHLY a column for such bits of interesting facts as doctors may see fit to report, and thereby serve a double purpose, of interesting our physicians in our history and preserving the bits of data for posterity?

MALCOLM HART HARRIS.

Woman's Auxiliary, to the Medical Society of Va.

PRESIDENT—*Mrs. J. Allison Hodges*, 5511 Cary Street Road, Richmond.
PRESIDENT-ELECT—*Mrs. W. P. McDowell*, Larchmont, Norfolk.
SECRETARY—*Mrs. James K. Hall*, 3011 Seminary Avenue, Richmond.
TREASURER—*Mrs. Reuben F. Simms*, 2034 Park Avenue, Richmond.

Report of Annual Meeting of State Auxiliary.

The Ninth Annual meeting of the Woman's Auxiliary to the Medical Society of Virginia was held in Roanoke, October 6, 7, and 8, 1931. The Auxiliary had an unusually interesting program this year which you have, of course, seen in the October issue of the VIRGINIA MEDICAL MONTHLY.

On the afternoon of Tuesday, October 6th, the Executive Board of the State Auxiliary met, with Mrs. J. Allison Hodges, presiding. In the absence of the Secretary, Mrs. J. K. Hall, Mrs. Arthur Brinkley kindly consented to serve as Secretary. The very full and excellent minutes of the former Secretary, Mrs. Joseph Bear, were read in detail. Many important points were discussed, especial attention being given as to how to increase the interest in the work of the Auxiliaries, and to get Virginia better organized.

A letter from Mrs. M. N. King, resigning the office of President-Elect, was read and accepted with much regret. Also, the resignation of our very efficient Treasurer, Mrs. W. B. Porter, was accepted with great regret; special thanks are due Mrs. Porter for kindly serving a year longer than the usual term.

The Executive Board was empowered to fill these two offices.

We feel we are most fortunate in having Mrs. W. P. McDowell's consent to be President-Elect; she has a brilliant list of achievements to her credit as President of the Norfolk Auxiliary, and we believe her enthusiasm and ability as a leader will stimulate the growth of the Auxiliary.

Mrs. Reuben F. Simms, of Richmond, is the new Treasurer. We are always glad to welcome the young doctors' wives in our official family. We need the courage and enthusiasm of youth in this Public Health Work.

The first business session of the Auxiliary was held at ten o'clock, Wednesday, October 7th, in the Elks' Club, with the President, Mrs. Hodges, presiding.

After the invocation a very cordial welcome was extended by Mrs. W. S. Butler speaking for Mrs. John O. Boyd, the Chairman, who was prevented by illness from being present, much to our regret. Mrs. Fletcher Wright, of Petersburg, responded in a very gracious manner. A digest of the minutes of the last annual meeting was read by Mrs. Brinkley, Secretary, *pro tem*, and the reports of the other officers followed in their regular order.

Due to limited space the reports cannot be printed in full. The President stressed the need of educating prospective mothers and Public Health Education in general, by assisting schools and other organizations to put on Health Programs.

Mrs. Hodges said she had written many letters to our National Chairman, and hundreds to the women and doctors in the State, in her

efforts to enlarge the membership of the Auxiliary. Besides these, she contributed an article each month to the VIRGINIA MEDICAL MONTHLY, as they very generously give us several columns in each issue. She closed by saying that the Auxiliary differs from all other Women's Associations, Clubs, etc., which are composed of women of various interests, and whose husbands represent all professions and occupations. Our husbands represent but one profession, the noble Profession of scientifically ministering to human ills. This fact should bind us closer in fellowship, and make us more earnest in our individual efforts to promote the work of both the State and A. M. A. Auxiliaries.

Then the reports of the Standing Committees were read:

Health Education: The Chairman, Mrs. Southgate Leigh, urged the importance of educating ourselves; that we form study groups, so that we would have definite knowledge of Public Health matters to pass on to others.

The Chairmen for Organization and Legislation were absent, and their reports were read by the Secretary.

The new Chairman for *Hygeia*, Mrs. C. Lydon Harrell, reported the number of subscriptions that had been secured last year, and outlined her plans for this year, and asked the cooperation of the members.

The Secretary reported that eighty-two visiting and sixty-two local ladies had registered.

Mrs. Hodges then introduced the guests of honor.

The high-lights of the meeting were the addresses of Mrs. George Hendon, President of the Woman's Auxiliary to the Medical Society of Kentucky, and Mrs. Arthur McCormack, Past-President of the Auxiliary of the Southern Medical. They brought most inspiring messages, which we hope will stimulate us to greater efforts.

The President, Dr. J. Allison Hodges, President-Elect, Dr. I. C. Harrison, and two of our Advisory Committee, Dr. Southgate Leigh and Dr. J. W. Preston, brought us messages of encouragement and appreciation, after which we adjourned for lunch.

We are glad the Auxiliary was officially recognized by the Medical Society, as part of its activities, when the President was asked to report with the other Committees, at the Session Wednesday night.

Thursday morning the meeting opened at 10:00 A. M. The reports of the Norfolk, Petersburg, Richmond and Wise Auxiliaries were given, showing that much constructive work had been accomplished.

Mrs. E. H. Ould, President of the Roanoke Woman's Club, was present and told of their welfare work, especially in regard to crippled children. She pledged their support to our organization.

One of the most remarkable reports made was that of Mrs. Mountcastle, who is not in any way connected with the Medical Profession, yet seeing the need of medical attention for school children, she started three years ago having some children examined. Since that time hundreds of school children, through her efforts, have been treated for adenoids, eyes, teeth and ears examined, and have been restored to health and able to pursue the regular school course.

We are trying to establish through our Public Health Relations cooperation with other women's organizations that are interested in Public Health and are so glad to have the support of these organizations pledged.

Mrs. W. F. Drewry, of Richmond, led the discussion in public relations. She said there are many cults, fads and semi-medical treatments in evidence today, and we must beware of them and rally to the support of scientific medicine.

Addresses were given by Dr. W. F. Draper, the new Health Commissioner of Virginia; Dr. Greer Baughman, upon prenatal care; Dr. Louis Brand, upon the condition of women and children in Korea. Miss Ellen Smith, who has given invaluable service to the Public Health Department in her work for the pre-school examinations and Child Health day, made a most interesting address.

This brought to a close a very instructive and interesting Convention. The Local Committee seem to have anticipated every wish, as everything was done for our pleasure and comfort. The entertainments were unusual and varied—a delightful luncheon at the Country Club, a trip to the Natural Bridge, followed by a lovely tea at the historic old Forest Tavern. A gorgeous Ball and Cabaret was the climax of the Convention.

We wish to express the very sincere appreciation of the members of the Auxiliary for the lavish hospitality and many courtesies ex-

tended to them by the Hostesses. The Roanoke Convention is over, but our visit to your "Magic City" will be a golden memory to carry through the years.

Hygeia.

Your national president, Mrs. A. B. McGlothlan, and your national chairman for *Hygeia*, Mrs. Rogers N. Herbert, desires your national Press and Publicity Chairman to give you with these items a special reminder concerning *Hygeia*.

There are many Auxiliary women who are enthusiastic about *Hygeia*. There are some who are indifferent. What, would you say is the occasion for this difference in attitude? It would be a safe wager that the indifferent Auxiliary woman is one who does not see and read *Hygeia*. Familiarity in this case is a cure for indifference.

Did you know the *Hygeia* subscriptions through Auxiliary efforts are 50 per cent more now than they were at this time last year?

Did you contribute to this increase? If so, keep up the good work. If you did not so contribute, join the army now of those who read *Hygeia* and want to spread its gospel.

From the office of our national president, Mrs. A. B. McGlothlan, 821 N. 24th St., St. Joseph, Mo., or from the national *Hygeia* chairman, Mrs. Rogers N. Herbert, 1509 Stratton Ave., Nashville, Tenn., you may secure any one of the following Auxiliary productions:

Hygeia Talks and Suggestions for their Use:

(a) *Hygeia*, a Help for Teachers.
(b) *Hygeia*, a Help for Mothers.
(c) How the Nurse Can Use *Hygeia*.
(d) *Hygeia* for Leaders of Teen-Age Girls.
(e) Why the Doctor is interested in *Hygeia*.

We should be puffed up with pride that these incomparable talks and the equally incomparable "Health Education Envelopes" have been produced by our own Auxiliary women.

One of the approved uses to which your community's share in the funds from the Tuberculosis Christmas seal stamps may be applied, is the placing of *Hygeia* in the public schools.

To extend *Hygeia* is the one request that has come to us from the American Medical Association. Here is a goal and one of the many ways to that goal.

Here are two other good suggestions: Plan to use subscriptions to *Hygeia* as Christmas gifts. Send to *Hygeia* Publishers lists of heads of families of children where *Hygeia* is not taken but where it might be taken and appreciated.

Miscellaneous

Wee Moderns

By Berton Braley

The babies of these present days are raised upon a system,
You count their calories of food and on a card you list 'em;
They're spanked upon a schedule and petted by the clock
And you musn't ever jounce 'em and you musn't ever rock;
Physicians choose their style of dress and fix their hours of sleep
And tell you when they ought to laugh and when they ought to weep,
Their every eccentricity is catalogued and filed
For the modern type of baby is a scientific child!

Time was that mother raised them in a rather casual way,
With a bit of help from grandma—but that isn't done today;
The bringing up of babies is a far from simple art
And you need a dozen volumes and a blueprint and a chart
A clinical thermometer, a stethoscope, a scale
Some test tubes and a dictaphone that registers each wail,
The modern mother's regimen is very far from mild;
For the baby of the present is a scientific child!

Oh yes, I am describing the *modern* baby now!

Oh, the old folks sniff about it and the jesters jest a lot
But the modern type of baby is a healthy little tot,
He may be robbed of baby-talk, of many pats and kisses,
But there's a heap of colic and other ills he misses;
And in spite of all the sentiment that in our cosmos lurks
There isn't any question that the modern method works—
For the scientific baby is a husky little tad,

A Credit to the Doctor, and the Mother, and the Dad!

—*Copyright S. M. A. Corporation, Cleveland, Ohio.*

Drop a word of cheer and kindness
Just a flash and it is gone;
But there's half a hundred ripples
Circling on and on and on.
—*Selected.*

PROCEEDINGS
Medical Society of Virginia

MINUTES OF THE SIXTY-SECOND ANNUAL SESSION OF THE MEDICAL SOCIETY OF VIRGINIA

Roanoke, Virginia, October 6, 7 and 8, 1931

GENERAL SESSIONS

Tuesday, October 6

8:00 P. M.

The Medical Society of Virginia convened in general session in the ballroom of the Patrick Henry Hotel, Roanoke, on Tuesday, October 6, 1931, and was called to order at 8:30 P. M., by Dr. W. L. Powell, of Roanoke, General Chairman of the Committee on Arrangements.

The invocation was offered by Rev. H. Spencer Edmunds, D. D., of Roanoke.

The address of welcome was made by Dr. Charles J. Smith, President of Roanoke College, in the absence of Honorable C. A. Woodrum, who was called from the city on business.

Dr. A. T. McCormack, invited guest, at the request of the President, replied to the address of welcome. He said:

"Fellow Virginians—I call you that because in Kentucky we feel we are still a county of Virginia, and I, especially, feel so since I am a University of Virginia man myself and am proud of that. It is with some temerity that I, as the guest coming possibly farthest, venture to respond to this very fervent address of welcome. I had the privilege in recent months of traveling over many of your excellent roads and being reminded again of the history, the glorious history of the Old Dominion, that I learned as a child at my mother's knee. I have visited the ancestral estates where my fathers dwelt and have wondered how it was possible for even the younger sons to wander away from them. It is a joy to come back to Virginia and share with you the pleasure I know you must have in this great, progressive city of Roanoke. It is only a few generations since we trekked west, starting first to Kentucky and then to the great Northwest. We are descendants of the same forbears that were your ancestors, and in coming back here I know I speak for the joy you all feel in being present tonight in historic Roanoke.

"It is a particular pleasure for a Kentuckian to speak to an assemblage of Virginia doctors. No other commonwealth has taken the stand that has made American medicine as prosperous as it is today. I wish to take this opportunity to congratulate you on the high standing and distinguished position of the three gentlemen that represent you in the House of Delegates of the American Medical Association. There are no other three men in the House of Delegates of wiser counsel, of more distinguished presence, of greater power.

"I want to congratulate you, too, tonight, particularly because I notice the splendid program and great promise of achievement of one of the newer branches of medical organization, the Woman's Auxiliary. You know that Virginians and Kentuckians are very conservative; they let others try things out first and prove them before we undertake them. To many of us this is a new consideration. We had become an ultra-scientific organization, and it was with some little difficulty that our promulgations were given to the public. I do not believe any other body of people understand us as do our wives; then, if they misunderstand, they do it more graciously than anyone else can. In carrying their influence into the parent-teacher organizations, the women's clubs, etc., they are helping to defend us against the cults and quacks and other inroads upon the medical profession. So I hope you will support the Woman's Auxiliary.

"It is with these few scattering remarks that I respond to the very gracious address of welcome. I shall strive to emulate the maker of that address by being very brief in expressing our delight in being here."

Dr. J. Allison Hodges, Richmond, President, read his presidential address, entitled "Some Special Topics of Current Interest to the Medical Profession."

President Hodges, in introducing Dr. Russell L. Cecil, Professor of Medicine at Cornell University, New York, an invited guest, said:

"I am sure you will overlook that in my eagerness to tell you something of the progress of medicine I have forgotten my usual Virginia hospitality and politeness, and have preceded the speaker and honored guest of the evening with my own speech. It has, however, for sixty-two years been the custom with this Society, and almost an established ritual, that the president should first make his offering; and I can assure you that it is only this that has delayed the pleasure which we shall now have in hearing from our distinguished and honored guest, Dr. Russell L. Cecil, Professor of Medicine, Cornell University, New York City, who will speak on the subject of 'Arthritis.' New York usually has the biggest and the best of everything, but we taught Dr. Cecil how to practice medicine, and can rightfully claim him as our own. He has been a great honor to us, and we are proud to have him back with us and to extend him a hearty welcome. We are willing to share with Alabama and New York his honors, because there are enough to distribute among us all. It is an honor and a privilege to present Dr. Cecil."

Dr. Cecil said:

"Mr. President, Ladies and Gentlemen: It is a great pleasure to be with you tonight and a particular pleasure to sit on the platform with two of my old teachers at the University College of Medicine, Dr. J. Allison Hodges and Dr. Stuart McGuire. I recall many pleasant instances of those days, now too long ago to mention, when I sat at the feet of these great teachers and had my first lessons in scientific medicine."

Dr. Cecil then addressed the Society on "The Classification and Treatment of Chronic Arthritis," the address being illustrated by lantern slides.

Papers were then presented by members, the first of these being by Dr. Warren T. Vaughan, Rich-

mond, who read a paper entitled "Arthritis Treated as a Form of Bacterial Allergy."

The privileges of the floor were extended by President Hodges to Dr. Cecil, to the visiting delegation from North Carolina, and to any other fraternal visitors.

Dr. Vaughan's paper was discussed by Dr. _____ _____; by Dr. Russell L. Cecil, of New York, and by Dr. Vaughan in closing.

Mr. Aubrey H. Straus, Richmond, read his paper entitled "Problems in the Relationship of Streptococci and Diphtheroid Bacilli to Chronic Infectious Arthritis," which was discussed by Drs. O O. Ashworth, Richmond; Russell L. Cecil, New York City, and by Mr. Straus in closing.

Dr. J. H. Hiden, Pungoteague, read his paper entitled "Is the Family Physician Any Longer a Necessity?"

The Society then adjourned, at 11:20 P. M.

Wednesday, October 7

The Medical Society of Virginia met in the ballroom of the Patrick Henry Hotel and was called to order at 9:25 A. M. by Dr. I. C. Harrison, of Danville, President-elect.

Dr. M. J. Payne, Staunton, read his paper entitled "Ward Walk, with Discussion of Some Clinical Problems."

Dr. James T. Tucker, Richmond, gave an illustrated address on "The Treatment of Fractures by Local Anesthesia and Skeletal Traction," which was discussed by Drs. Roy H. Hoover, Roanoke, and J. B. Dalton, Richmond, and in closing by Dr. Tucker.

President Hodges then took the chair.

President Hodges stated that the hour had arrived for the special topic of discussion, the Symposium on Mental Hygiene. He congratulated the Society upon its forethought in selecting this subject for discussion, "because it is a fact that mental hygiene is no longer a neglected stepchild of medicine but is a well recognized member of the family of arts and sciences." He then introduced Dr. Ralph P. Truitt, Professor of Psychiatry at the University of Maryland, Baltimore, who, by invitation, was to present the first paper of the symposium.

The following papers were read as a Symposium on Mental Hygiene: (This group of papers will appear in an early issue.)

"The Mental Hygiene Movement," by Dr. Ralph P. Truitt, professor of Psychiatry, University of Maryland, Baltimore.

"A Survey of Mental Disease in Virginia," by Dr. D. C. Wilson, University.

"The Present Activities for the Prevention of Mental Disorders in Virginia," by Dr. William F. Drewry, Director, Bureau of Mental Hygiene, State Department of Public Welfare, Richmond.

"A Suggested Program of Mental Hygiene for Virginia," by Dr. Beverley R. Tucker, Richmond.

Following this paper, Dr. M. B. Hiden, Warrenton, Vice-President, took the chair.

The papers in the symposium were discussed by Dr. I. C. Harrison, Danville, in Relation to General Medicine; Dr. R. L. Payne, Norfolk, in Relation to Surgery, and Dr. L. T. Royster, University, in Relation to Pediatrics.

Dr. John R. Gill, of the Central State Hospital, Petersburg, read his paper entitled "Epidemic Encephalitis," which was discussed by Dr. D. C. Wilson, University.

Dr. E. P. Tompkins, Lexington, read his paper entitled "How Far Will a Malingerer Go?—A Case Report."

The paper of Drs. Dudley C. Smith and R. Earle Glendy, Department of Dermatology and Syphilology, University of Virginia Hospital, University, entitled "The Preventive and Therapeutic Aspects of Central Nervous System Syphilis in General and Institutional Practice," was read by Dr. Glendy and was discussed by Drs. Raymond Kimbrough, Norfolk, and Ralph P. Truitt, Baltimore, and in closing by Dr. Smith.

The Society then adjourned, at 12:50 P. M., to attend a luncheon for the members and guests at Hotel Roanoke.

Afternoon Session

The Medical Society of Virginia met in the ballroom of the Patrick Henry Hotel, with Dr. M. B. Hiden, Vice-President, presiding, and was called to order at 3:10 P. M.

Dr. Southgate Leigh, Norfolk, read his paper entitled "Abdominal Drainage."

Dr. Buckner M. Randolph, Charlottesville, read his paper entitled "The Relation of Infection in Early Life to Subsequent Mental Disorder," which was discussed by Dr. Manfred Call, Richmond, and in closing by Dr. Randolph.

Dr. J. B. Dalton, Richmond, read his paper on "The Advantages of the Plaster Traction Splint." (Lantern slides.)

Dr. J. H. Bell, Colony, read his paper on "Eugenic Control and Its Relationship to the Science of Life and Reproduction."

Dr. C. C. Coleman, Richmond, read his paper entitled "Diagnosis and Surgical Treatment of Meniere's Syndrome," which was illustrated by lantern slides.

Dr. Staige D. Blackford, of the Department of Internal Medicine, University of Virginia Hospital, University, read his paper on "Spontaneous Subarachnoid Hemorrhage: Report of Four Cases." (Lantern slides.)

Dr. W. M. Bowman, Petersburg, read his paper entitled "Birth Control," which was discussed by Dr. W. B. McIlwaine, Petersburg.

Dr. William K. Lloyd, Christiansburg, read his paper on "The Practical Application of the Modified Aschheim-Zondek Test for Pregnancy: Demonstration with Test Animals"; and Dr. Walter B. Martin, Norfolk, read his paper entitled "Value of the Hormone Test for Early Pregnancy." These two papers were discussed by Drs. A. M. Groseclose, Roanoke, and J. Shelton Horsley, Richmond; and in closing by Dr. Lloyd.

The paper of Dr. C. J. Andrews, Norfolk, entitled "Trichomonas Vaginalis Vaginitis," was read by title.

Dr. Greer Baughman, Richmond, read his paper on "The Teaching of Prenatal and Postnatal Care."

The afternoon session was then adjourned, at six P. M.

Evening Session

The Wednesday evening session of the Medical Society of Virginia was held in the ballroom of the Patrick Henry Hotel, with the President, Dr. J. Allison Hodges, presiding, and was called to order at 8:10 o'clock.

President Hodges said: "As many of you know, the first part of the evening's program is to be dedicated to a special subject. Before beginning that, however, we wish to have very brief reports from two or three of our committees which are doing special work.

"You will remember that the Medical Society of Virginia at first was a social, a business and a scientific organization. Latterly it has become a scientific and an educational association. However,

our educational work has grown to such a degree that it not only interests the members of the Society, but we think it well that they should know in a very brief way something of what we are doing. We have more than twenty-five committees; we have more than one hundred members who are not, as in the past, meeting and working one or two days in the year, but are meeting and working throughout the year for the benefit of their profession and the public generally. So tonight, as the first feature of this program, I shall call upon the chairmen of one or two of these committees to make very brief reports. First I shall call upon the President-Elect, who, by virtue of his office, is chairman of the Department of Clinical Education, Dr. I. C. Harrison, of Danville."

Dr. Harrison:

"Ladies and Gentlemen: We have in our Society, as Dr. Hodges said, a Department of Clinical Education. That department has been working now for two years. The object of this work is to continue the education of the trained doctor. During this past year we have had between twenty and twenty-five clinical meetings in various sections of the State. At some of those meetings we had a program confined to one particular subject—cancer, tuberculosis, or some other disease, and stressed the points of interest to the public and also those of interest to the profession. In most of the meetings we discussed several subjects. Our two medical schools co-operate with us, furnishing us with essayists and clinicians to discuss these questions. We also invited outside doctors and pharmacists, teachers and students, and all of these meetings were well attended. Of course, the attendance was very much larger at some places than at others; but I feel very well satisfied with the work, in that the attendance was good and the interest shown very real, and we feel that with the third year of this work now beginning, our doctors will be brought up to date. That applies not only to the country doctor but to the city doctor. We feel that it is the ambition of every member of this society to be conversant with every subject and to be able to give better service."

President Hodges then said: "We have, ladies and gentlemen, as I have said, a number of other functions which would be of general and public interest if I wished to call upon the chairmen to report. However, instead of calling upon them I shall simply mention them. Dr. E. C. S. Taliaferro is chairman of the Walter Reed Commission, which has preserved the home of Walter Reed, which is now a medical shrine in eastern Virginia. I might call upon Dr. Greer Baughman, who is chairman of the Maternal Welfare Committee of this Society, which acts in conjunction with the Health and Welfare Departments of the State Department of Health. I might call upon Dr. Wright Clarkson, chairman of the Committee for the Regulation of Training of X-Ray and Clinical Laboratory Technicians, who has, through his committee, worked to establish high standards for technicians in the State. I might call upon Dr. Wyndham B. Blanton, chairman of the Committee on History of Medicine of the Society, which has already done such notable work in publishing the first volume of Virginia's medical history during the seventeenth century. The second volume, on the medical history of the State during the eighteenth century, is in press; and the third volume, on the nineteenth century, will soon be issued. It is indeed a monumental work. I might call on the Child Welfare Committee, of which Dr. W. P. Jackson is chairman. Dr. Jackson works, through his committee, with the Welfare Department of the State. I might call upon the chairman of the Public Relations Committee (State and County), Dr. G. F. Simpson, whose committee has done a most valuable work, in making a connecting link between the activities of the Medical Society of Virginia and any other health movements there might be in the State, giving the assistance of the Medical Society, and generally leading in the development of the work. I might also call upon Dr. F. H. Redwood, who is chairman of the Mental Hygiene Committee. The work of this committee and the placing of mental hygiene on the program as a topic for special discussion today show that the medical profession of Virginia is taking a forward step in this most needed movement. However, I am going to call upon Dr. Southgate Leigh, who is not chairman of a committee but the chairman of an advisory board. You know we have to keep our women allies in line. We can not tell them to do things, but we can advise them, and Dr. Leigh is the one upon whom we put that responsibility and duty. I present to you Dr. Southgate Leigh, of Norfolk, Chairman of the Advisory Board to the Woman's Auxiliary."

Dr. Leigh:

"Ladies and Gentlemen: The Woman's Auxiliary of the American Medical Association, established only a few years ago, now numbers fifteen thousand of the best women of this country, banded together and working together for humanity and for the good of the medical profession of America. This organization has branches in practically every State of the Union. In four States every county in those States has a branch; in other words, as the ladies term it, in those States they are one-hundred-percent organized. The work that they are doing is far-reaching and most effective. The principal effort on their part is to tell the true story of medicine to the public. You know the public does not understand the work of the doctors as it should. The doctors can not tell the people; they can not enlighten them; but the women can, through their various organizations; and they can do a great deal in keeping the people away from quackery. These women all over the country are assisting in health movements of all kinds and are doing a great deal to improve the health conditions of their communities. They are working in entire harmony with the profession, both locally and generally. I wish that I could impress upon the splendid medical men of this State what medical organization means. I have, through your kindness, represented this Society for fifteen years in the House of Delegates of the American Medical Association. It simply makes me sick to see the advantages that other States are getting from organized medicine, a good many of which we are not getting ourselves. I should like for you gentlemen, the members of the Medical Society of Virginia, to assist the women in organizing a woman's auxiliary in connection with every one of your county medical organizations. You will reap the benefits in a very, very short time.

"We have with us tonight the President of our State Auxiliary, and it gives me great pleasure to introduce to you this charming woman, President of the Woman's Auxiliary, to the Medical Society of Virginia, Mrs. J. Allison Hodges, of Richmond."

Mrs. Hodges then said:

"Mr. President, Dr. Leigh, and Friends: I feel very much intimidated before this august assembly in saying even a word, but as we have the endorsement of two such eminent physicians as Dr. McCor-

mack and Dr. Leigh, I shall give you a very brief report.

"We feel that the Woman's Auxiliary is highly honored tonight, in that it is being officially recognized for the first time by the Medical Society of Virginia, through the Society's request for a brief report of our work. The word 'auxiliary' as defined in the Standard dictionary, means 'Giving or furnishing aid or support, especially in a subordinate or a secondary manner; a reserve force.' In other words, not as a leader, but as a follower, and in this way, we endeavor to carry out the work assigned us by the local and State medical societies and the American Medical Association.

"Every other organization, church, civic, and military, has a woman's auxiliary, so why not the medical society? Certainly health is of more vital concern to the nation than anything else in the world, and upon us women devolves the care of the children and the health of the family generally. Truly, the strength of the nation lies in the health of its citizens.

"The Medical Society of Virginia is striving always to raise the standard of health by education in medical matters, by speakers and by the printed word, by the use of moving pictures and by broadcasting information along the lines of preventive medicine, and doctors' wives can individually and collectively help in the furtherance of this program by supplying speakers for clubs, parent-teacher associations, the Y. W. C. A., and other organizations, thus giving the public true health programs as outlined by the greatest doctors of this day, and not leaving these programs in the hands of sincere but oftentimes uninformed women, many of whom are interested only in spreading the propaganda of the various cults, fads, etc. It is largely through women that these false doctrines are spread, and when some highly misinformed sister delivers herself of unctuous error at the card club or tea table, an intelligent physician's wife who is alert to her opportunity can, with tact and discretion, correct the error. To do this, we must have accurate knowledge and be able to give the facts about such things as immunization, inoculation against typhoid fever, etc., and thus, doctors' wives can be potent factors in molding public sentiment concerning the real mission of organized medicine, especially in its crusade of prevention of disease.

"The Auxiliary takes no action without the official sanction of the Society, and for this purpose it has an advisory committee of three members of the Society. We feel that our Virginia doctors have not fully understood the object of the Auxiliary, as we have not had their full cooperation; and without the interest and approval of the doctors we can not expect to have the interest of their wives. We are organized to serve you, and we hope that you will call upon us. You would have not only the influence of the more than three hundred members of the Auxiliary in this State, but this influence multiplied many times, through their membership in other organizations.

"The movement for the organization of woman's auxiliaries to medical societies has grown rapidly in the eight years of its existence, and at present there are thirty-seven States organized, with a membership of more than twelve thousand.

"In what ways can we serve you? As an illustration, the American Medical Association urged the auxiliaries to secure subscriptions to "Hygeia," which had been published for three years at a loss of $30,000. Today, with their help, it has a net profit of $10,000 annually and a circulation of over eighty-five thousand, and for this increased circulation the A. M. A. gives credit to the Women's Auxiliaries. This is just one of the things we have done, and we are always ready to serve when called upon.

"I hope the doctors now have a better understand- of the purpose of the Auxiliary and that they will, when they return home, encourage their wives to organize. Virginia has always been a leader, and we wish our State to lead in this work."

President Hodges thanked the Woman's Auxiliary to the Medical Society of Virginia for its cooperation and work and for the presence of its representatives on this occasion.

He then presented Mr. J. H. Montgomery, Executive Secretary of the Cooperative Educational Association of Virginia, and special representative of Governor Pollard, who announced the Conference on Childhood and Youth to be held in Richmond on November 23-24, and invited the members of the Society to attend and participate in the conference.

President Hodges said: "Personally and professionally, we feel that tonight is a real era in the history of medicine in Virginia, because, through unfortunate circumstances which we all mourn, we have to welcome a new Commissioner of Health. We are not only welcoming him here tonight and extending a hearty hand of goodwill, but we wish to assure him that the Medical Society of Virginia is behind him in his efforts to make the Department of Health of the State of benefit to all the people, and to ask him to utilize the doctors always, first and all the time, as his assistants. It is a pleasure for me officially to do this, for I believe that Dr. Draper is not only going to be of great assistance to the Department of Health of the State, but that he is going to be of great aid to us, the medical profession of this State. I am going to make no lengthy introduction of one who is a Virginian and has been for seventeen years, one who has worked among us as a doctor and as an official, one who comes now knowing the needs of the doctor and the duties of the official, and one who we believe will very greatly add to the prestige already enjoyed by this State in health matters. We welcome him as one who is peculiarly our own.

"I have invited to be with us on this occasion, to do honor to him who has assumed office, the Health Commissioner of Kentucky, Dr. A. T. McCormack, whom you know; Dr. Riley, the Health Commissioner of Maryland; Dr. W. T. Henshaw, the Health Commissioner of West Virginia, and Dr. Bishop, the Health Commissioner of Tennessee. I shall read to you now an extract from a letter from one of the invited officials, Dr. Bishop, who could not come, a letter that I shall use as an introduction to Dr. Draper, because it so peculiarly fits the situation and so aptly expresses our sentiments."

Dr. Bishop says:

"I believe Virginia is fortunate in securing Dr. Draper's services. Not only is he well trained in public health practice and public health administration, but he has a fundamental understanding of medical relationships which will make it possible for him to work constructively with the medical profession in service to the people of Virginia."

I now present Dr. Warren F. Draper, the new State Health Commissioner of Virginia.

Dr. Draper read his paper, entitled "Interrelationships of Preventive and Curative Medicine."

President Hodges said: "We have with us, gentlemen, as I indicated a moment ago, these brother commissioners, who are interested in our work and in our new commissioner who addressed you a few minutes ago and expressed his views and asked your cooperation with him. I now have the pleasure of

presenting to you, first, the Health Commissioner of the daughter of Virginia, Dr. A. T. McCormack, of Kentucky, of whom I said last night that he is not only a good Kentuckian but a good Virginia-Kentuckian."

Dr. A. T. McCormack, State Health Commissioner of Kentucky, Louisville, said: "It is a real privilege to have been here tonight and to have heard this splendid, frank and honest statement. It verifies the feeling that we have had who have been associated with Dr. Williams and Dr. Draper in the Conference of State and Provincial Health Officers of North America for these many years—the feeling that in Dr. Draper the one man had been selected who could worthily fill Dr. Williams' shoes.

"I am the State Health Officer of the State of Kentucky and am secretary of the State Medical Society and editor of the Kentucky Medical Journal. I am the hereditary servant of the people. Dr. Draper has said to you tonight what those who specialize in public health all the time need to say to the general practitioner and his brother specialists in medicine. It is important to remember that the first duty of every one of us is to keep every single soul now living on this earth as well and as effective as possible, receiving from them our compensation and our remuneration for our services, that we may be able to care for our families and ourselves. But first give the service, and I venture the assertion that no single medical man has ever given honest service to every single individual in his territory, preventing disease as much as possible, and has not received just remuneration. As the representative of our profession, I want to say to you that you need not fear the administration of public health work is in any way leading to the practice of State medicine. What we need to fear is our own shortcomings as a profession. We need to better serve our people, and when we shall have done that, we shall better fill the bill and shall be better able to fulfill our own individuality and meet the needs of our patients. People will no longer have typhoid fever endemic or epidemic in their territory. People will no longer be satisfied to have a very large number of preschool deaths from scarlet fever or any other cause. Those deaths will stop if we, as practicing physicians, immunize every baby in our practice at the time when it should be immunized. Most of the deaths, we know, occur before the children start to school. We can not merely sit still and keep the tide of public education from making progress. We have to attend to the increasing demand of the people for better service, and have to give that service.

"I feel very greatly honored in being one of you tonight on this occasion, when you welcome Dr. Draper to Virginia In welcoming him to Virginia let us determine, if we will, to accept his invitation to work with him, cooperate with him and work out his plans. We all know the midwife is an evil, but so far she has been a necessary evil. There are not enough of us to do the job. It is hard enough to teach us to be good obstetricians, but it can not be done with the midwife. But we can make them less dangerous, and I am sure that in Virginia you are making them less dangerous. Let us make the public understand that we have a high maternal death rate, that our mothers are needlessly being slaughtered. Let us awake them to that fact, so that we shall be given the facilities for better care of them, so that we can save them. Let us do something for the mothers of America; they are our mothers, our wives, our daughters. Let's make safer that most important period in the life of woman. We can do it, and let's put our shoulders to the work. We have to get up at night; we have to forget a lot of the "Chain-store" methods of rapid delivery. But let's have the courage to do right. That is what this man has the courage to do, and I know it is what Virginia has the courage to do. It is that challenge from him to you, that spirit of confidence between doctor and doctor, that will make this grand old State greater and greater.

"It is indeed a very great privilege to be with you."

President Hodges then presented Dr. R. H. Riley, State Health Commissioner of Maryland, who spoke as follows:

"Mr. President, Ladies and Gentlemen: I could not stay away from Virginia when I received such a cordial invitation from your President, Dr. Hodges; I wanted to come here and stand by Dr. Draper. Dr. Draper has been known to the health officers of this country for quite a few years—at least twenty years. He is well known. He is one of the men who have helped to put that work on the high standard and the high plane on which we now find it. That is the only service which Maryland looks upon favorably in Washington. I think Virginia should be proud of itself. I have often wondered how it happened that Draper could be persuaded to leave the most wonderful service of its kind in the world to come to Virginia, but, since we are all Virginians, I can understand it. It seems to me we are having a sort of family reunion here tonight, and it is fine for us to get together and felicitate each other. If Dr. Draper can work out in Virginia the problems that concern you most seriously (and I believe he can, because I believe the battle is half won when you state your position truthfully and frankly), I think the nearby States will benefit by it in the very near future.

"It is rather unusual to have a medical association, so far as I know, with the exception probably of Alabama and Kentucky and a few others, receive the State health officer into its organization in such a cordial manner; and I think it augurs well for the people. I congratulate you upon having Dr. Draper, and I want Dr. Draper to understand fully that he has great responsibility in coming here to succeed Dr. Ennion G. Williams. I learned to love Dr. Williams, the pioneer, and truly he was loved by every one who knew him. Dr. Draper has a hard position to fill, but I do not believe the authorities of this State could have done better, if they had looked longer, than that which they have done, and I want to congratulate you."

President Hodges next presented Dr. W. T. Henshaw, State Health Commissioner of West Virginia, who said:

"Gentlemen, I know of nothing since I received my degree and the privilege to practice medicine that has given me more pleasure than the cordial and thoughtful invitation of the President of your society to attend this ceremony tonight. I feel that I should like to belong to Virginia, as the only certificate I have to practice medicine is with the gracious permission of your examining board. The only regret I have is that it antedates the period when all, or nearly all, of you began the study of medicine.

"If you will pardon this allusion or reference to Dr. Williams, I might say that from the beginning of our service in West Virginia he was recognized as an outstanding administrator in public health work, and I think his services can be recognized as being faithful, unselfish, and of lasting value After his death the thought was, 'Whom will the distinguished governor of your State appoint as his successor?' Many of us have felt that it was a mis-

take to enter public health work, primarily, and I may say principally, because of the uncertainty of the tenure of office. The governors of Massachusetts, Maryland and now of Virginia have established a fine precedent and worthy example in going far afield from the jurisdiction of their own territories to select the best qualified person to serve as State health commissioner. Certainly your governor has set an example that unselfishly I hope your neighbor on the west will follow before many years to come.

"I have never been to any meeting of a State medical association that showed as much interest in its State public health administration as you have at this meeting, and I congratulate Dr. Draper upon having such splendid support. I welcome him to the association of public health commissioners. I extend the wish and belief that with the aid of an intelligent medical service his term of service will be distinctly marked by the reduction of the known preventable disease, and I hope and expect that part-time health administration will become wholly obsolete."

President Hodges then thanked these distinguished gentlemen for their presence and for giving the right hand of fellowship in this struggle for professional service that all Virginia doctors are carrying on so earnestly and successfully.

The evening session adjourned at 9:45 o'clock, and was followed by a reception, ball and cabaret for the members, visitors and ladies accompanying them.

Thursday, October 8

The Society convened for the morning session in the ballroom of the Patrick Henry Hotel and was called to order at 8:45 o'clock by Dr. J. Morrison Hutcheson, Vice-President.

The paper of Dr. W. Ambrose McGee, Richmond, entitled "The Significance of the Schilling Differential Blood Count in Acute Infections of Childhood," was read by title.

The paper of Dr. John S. Weitzel, Richmond, on "The Etiology and Treatment of Enuresis," was read by title.

Dr. Dudley G. Ashton, Richmond, read his paper entitled "Diabetic Coma: A Report of Twenty-two Cases."

Dr. H. B. Mulholland, University, read his paper entitled "Diabetes in Children and Young Adults."

The paper of Drs. Oscar Swineford, Jr., and W. W. Waddell, Jr., of the Departments of Clinical Laboratories and of Pediatrics, University of Virginia, Medical School, University, entitled "Trichiniasis: Five Cases in One Family, with Results of Skin Tests," was read by title.

The paper of Dr. William B. Porter, Department of Medicine, Medical College of Virginia, Richmond, on "The Association of Angina Pectoris and Anemia," was read by title.

The paper of Dr. Hugh H. Trout, Roanoke, entitled "Pericardial Adhesions," was read by title.

Dr. J. G. Lyerly, of the Department of Oral Surgery, Hospital Division, Medical College of Virginia, Richmond, read his paper entitled "Repair of Bilateral Harelip" (illustrated by lantern slides).

Dr. J. Beverly DeShazo, Ridgeway, read his paper entitled "Don'ts in Dermatology."

The paper of Dr. Linwood D. Keyser, Roanoke, entitled "Iodine-Fast Hyperthyroidism: A Problem in the Treatment of Goitre," was read by title.

Dr. Kinloch Nelson, Richmond, read his paper entitled "Report of a Case of Cardiac Failure with Low Basal Metabolism and Hypertension."

Dr. T. G. Hardy, of Farmville, took the chair.

Dr. J. Morrison Hutcheson, Richmond, read his paper entitled "Physical Factors in Coronary Occlusion," which was discussed by Dr. J. D. Willis, Roanoke.

Dr. Hutcheson then took the chair.

The paper of Dr. G. H. Reese, Petersburg, entitled "Report of Nine Hundred Consecutive Abdominal Operations," was read by title.

Dr. J. Warren Sayre, Newport News, read his paper entitled "Subphrenic Infection: A Clinical Consideration of Its Diagnosis and Treatment."

Dr. F. S. Johns, Johnston-Willis Hospital, Richmond, read his paper entitled "Trauma of the Abdomen," which was discussed by Dr. M. A. Johnson, Roanoke.

Dr. Charles R. Robins, Richmond, read his paper entitled "The Treatment of Post-Operative Intestinal Obstruction," which was discussed by Dr. I. A. Bigger, Memorial Hospital, Richmond.

Dr. J. Shelton Horsley, Richmond, read his paper on "Vaginal Hysterectomy for Cancer of the Body of the Uterus" (illustrated by lantern slides).

Dr. W. Lowndes Peple, Richmond, read his paper entitled "Cancer of the Cervix: Observations Drawn from the Study of One Hundred Cases Treated with Radium."

Dr. R. L. Payne, St. Vincent's and Norfolk Protestant Hospitals, Norfolk, read a paper entitled "Uterine Fibromyomata: A Review of 1,145 Cases Treated by Surgery or Radium."

Dr. E. T. Trice, Grace Hospital, Richmond, read his paper entitled "Traumatic Industrial Surgery."

Dr. M. H. Todd, Norfolk, read his paper on "The X-Ray in Emergency Surgery." (Lantern slides.)

The morning session then adjourned, at 12:40 P. M.

Afternoon Session

The Thursday afternoon session of the Medical Society of Virginia was held in the chapel at Catawba Sanatorium, following luncheon as guests of the Sanatorium and was called to order by the President, Dr. Hodges, at three o'clock.

President Hodges expressed the appreciation of the members for this opportunity to see the work of this institution and enjoy the hospitality of its superintendent.

He said if there were no objection, he would rule that all papers on the program of the preceding sessions that had not heretofore been read be considered as having been read by title, so that they might be published.

The paper of Drs. J. B. Nicholls and L. R. Broome, Catawba Sanatorium, entitled "The Physical and X-Ray Examination of the Tuberculous Chest" (illustrated by X-ray photographs), was read by Dr. Nicholls and was discussed by Dr. W. E. Brown, Sanatorium.

Dr. Frank B. Stafford, Blue Ridge Sanatorium, Sanatorium, read his paper on "The Difficulties in the Diagnosis of Atypical Cases of Pulmonary Tuberculosis" (illustrated by lantern slides.)

Dr. Charles W. Scott, State Health Department, Richmond, read his paper entitled "Early Diagnosis of Tuberculosis in Children and Young Adults" (illustrated by lantern slides).

On motion, duly carried, the paper of Dr. Wm. H. Higgins, Richmond, entitled "Hunger Pains Without Peptic Ulcer," was read by title.

Dr. Robert S. Preston, Richmond, read his paper entitled "Gastric and Duodenal Secretion: Comparison of Stimuli."

Dr. M. O. Burke, Richmond, read a paper on "Gastric Cancer," which was discussed by Dr. J. Shelton Horsley, Richmond, who illustrated his discussion

with lantern slides, and by Dr. Carrington Williams, Richmond.

Dr. E. K. Flannagan, Mount Regis Sanatorium, Salem, read his paper entitled "Discipline in Tuberculosis."

The report of the House of Delegates was read by Miss Agnes V. Edwards, Secretary-Treasurer, and, on motion by Dr. J. Shelton Horsley, was received and filed.

President Hodges then said: "The time has now come when I am to surrender my position as the chief official of this Society, and it is not a time for words. Really, it is a time for me to remember whether or not, in so high and honorable a position as you have conferred upon me, I have given service to you. All that I can say is that my acts have been guided always by the highest motive for the best interests of this society, and every communication in writing and every speech has been directed to this end and to future and continued scientific service. It is a great pleasure, then, for me to be able to say to you at the close of this administration that our Society continues to advance along all lines of service that you have intrusted to your officials. I am glad that you will have in the different positions for the coming year men that will give even greater impetus to your efforts, but they will need your cooperation, of course, to make this Society what it ought to be—one of social pleasure to us all, but, especially, one of educational and scientific value to us, as well as to others. And I feel assured that my immediate successor, Dr. Harrison, to whom I now turn over this office, will continue to conduct this Society upon a high plane of service and will accomplish great things for us. It is my pleasure to present Dr. I. C. Harrison, of Danville, as your next President."

Dr. I. C. Harrison said: "Ladies and Gentlemen, Fellow Members of the Society: I have no speech to make. I tried to say a word of appreciation to the House of Delegates in Norfolk, last October, and since then I have had twelve months to get up a speech, and I am not a bit better prepared than I was then.

"It is a very peculiar honor that I enjoy and appreciate in being elected by the Medical Society of Virginia as their President. It is a double honor, I feel, that I follow in the presidency the man who has just taken his seat. It is also a great pleasure to me that the man who is to follow me and is to be associated with me in the work this next year is the same type of man that we have been having, so that we can look forward to his putting this Society on a still higher basis than that on which it rests.

"I want to thank you. I appreciate the fact that I stand here today because I am among my friends. I appreciate the fact that I have not done anything to deserve this honor. I have been working with my friends in the Society as a member of the various committees, as councilor, and in the House of Delegates, and have in some way wormed myself into your good graces, which I think is very fortunate for me, but I have in no way deserved this honor. I realize that fact as well as you do. At the same time, I am going to do my very best to see that we keep our feet on the same kind of standing and continue to look upward, as we have in the past. It is a great pleasure to me to see here some of my dear friends who have been President of this Society and have done much to dignify and elevate it.

"Gentlemen, I may say I have become somewhat familiar with the affairs of the Society in trying to follow this race horse for the last twelve months. There is a line by some poet (but I can not quote as Dr. Horsley does): 'They shall run and not be weary.' Now, I have been running, but Dr Hodges has not gotten weary. I expect to be weary in the next twelve months if I keep up the pace he has set.

"So far as the Department of Clinical Education is concerned, which we have gotten started, I want to ask your cooperation with Dr. Flippin. It shall be my purpose and my effort to continue to do everything I can to advance the work of that department, but our success will depend upon your continued cooperation and assistance.

"I thank you, and that is all I can say, gentlemen."

Dr. Harrison then read his list of committee appointments. (Published at end of Minutes of Business Sessions.)

Dr. J. C. Flippin, President-elect, was then presented and said: "I think there is hardly time for a speech, but being only the heir apparent anyway, I think it would be out of order for me to say more than a word of appreciation. I realize that it is a high honor you have bestowed upon me. I realize that just at this time there are many economic questions in the world that affect our profession, and I shall endeavor to give them my best attention and study. I thank you."

The program having been completed, and there being no further business to come up, the Medical Society of Virginia, on motion of Dr. J. Shelton Horsley, adjourned *sine die* at 5:10 P. M.

BUSINESS SESSIONS

The Council

The Council of the Medical Society of Virginia met at the Patrick Henry Hotel, Roanoke, Virginia, October 6, 1931, at 11:00 A. M.

Present: Dr. J. Allison Hodges, President; Dr. I. C. Harrison, President-Elect; Drs. R. D. Bates, P. St. L. Moncure, R. W. Miller, Wright Clarkson, J. M. Shackelford, J. R. Gorman, Percy Harris, C. B. Bowyer, and Miss Agnes Edwards, Secretary.

The first business of this meeting was the reports from the Councilors.

Dr. Bates, of the First District, after reading his report, offered as a suggestion that, in his district, the present grouping stand unless it be otherwise requested by the various counties. Dr. Clarkson made a motion that the Council sustain Dr. Bates' suggestion if the Committee on Group Societies approved of same and so recommend it to the House of Delegates. This motion was carried. Dr. Bates presented a letter from eleven Fredericksburg physicians asking that a charter be granted to the Fredericksburg Medical Society, this society to embrace the City of Fredericksburg and the Counties of King George, Spotsylvania, Caroline and Stafford. This petition also carried the request that all previous charters covering the Fredericksburg Medical Associations or Societies be revoked. It was moved, seconded and carried that the charter be granted and that this society be allowed representation in the House of Delegates at this meeting.

Dr. Moncure, Councilor for the Second District, told of the activities of the Second District Medical Society. This society had proved most satisfactory and they have had excellent meetings. He also stated that the Norfolk County Medical Society was most active. His report was ordered received and filed.

Dr. Miller, Councilor for the Third District, stated

that, as he had had no success as to holding clinical meetings, there was nothing special to report.

Dr. Clarkson, Fourth District Councilor, reported meetings in all counties and stated that all counties were fairly active. He said that Lunenburg County had been added to the Post-Graduate Society at its request.

Dr. Shackelford, of the Fifth District, said the county societies in his district were pretty active and that they had had a very enthusiastic meeting in his district to discuss state medicine.

Dr. Gorman, Councilor from the Sixth District, reported successful meetings. He told of the clinic which was held in Lynchburg and stated this was well attended by local men and about forty visitors.

Dr. Harris, Seventh District Councilor, reported meetings in all counties with the exception of one or two. They had had a very active clinic at the University of Virginia and another one will be held the latter part of this month. The University has very active meetings each month. Dr. Harris thought the division as made by Dr. Grandy in his maps would be a good thing for his district, as some of the counties were very much out of the way—over a mountain range—and it was hard for them to get together.

Dr. Knight, Councilor from the Eighth District, was absent, but it was stated that several counties in this district were quite active.

Dr. Bowyer, of the Ninth District, reported two very active district societies. He stated that the Department of Clinical Education had been a great help to them and they had also had a visit from the Public Relations Committee. He suggested closer cooperation between the group societies and the Department of Clinical Education.

Dr. Emmett, of the Tenth District, was absent, but it was reported that this District had had a very active year.

It being stated during the reports from the Councilors that Dr. Charles R. Grandy, Chairman of the Committee on Group Societies, had suggested that the Society postpone regrouping districts pending action of the State Legislature in forming new congressional districts, Dr. Miller suggested that the Council recommend to the House of Delegates that the Committee on Group Societies continue its activities. Dr. Moncure concurred in this opinion and stated that he thought the individual counties should be consulted; we should form our own grouping and not consider congressional districts but the wishes of the various counties. Dr. Miller then moved that a committee be appointed to carry such a recommendation to the House of Delegates. This being seconded and carried, Drs. Miller, Moncure and Harris were appointed as the committee. Dr. Miller asked that he be relieved and Dr. Bates was appointed in his place.

The next order of business was to consider the budget for the following year, a tentative budget having been prepared by Drs. Miller and Clarkson and Miss Edwards, in accordance with action of the Council at its mid-winter meeting. After discussion of some special features, Dr. Gorman made a motion that the budget be considered as a whole. Upon motion, duly seconded, the budget was adopted as presented.

The question of the Medical Defense Fund was next considered. It was stated that a legal opinion had been secured in regard to this fund to the effect that the Society could no longer be held liable for the defense of members sued for alleged civil malpractice, and it was suggested by the attorney that the Secretary-Treasurer be directed to merge this account with the General Fund of the Society. In view of the above, Dr. Miller offered a motion that the Council recommend to the House of Delegates that the Secretary-Treasurer be directed to merge the Medical Defense Fund and its securities into the General Money and Property account of the Society. This was seconded and unanimously carried.

Dr. Hodges next stated that the Society had before it a wonderful opportunity to secure financial aid in putting over a great work in Virginia, contingent upon the raising of a certain amount by the doctors of this State. He said that a committee known as "The Joint Committee on Pre-Natal and Post-Natal Instruction" was organized last winter as a component part of the Department of Clinical Education of the Society and asked that Dr. L. E. Sutton, chairman of this joint committee, be given the privilege of the floor in order that he might explain the proposition.

Dr. Sutton stated that the Department of Clinical Education, realizing the need for better pre-natal and post-natal care to reduce maternal and infant mortality in Virginia, had last winter appointed a sub-committee known as the Joint Committee on Pre-Natal and Post-Natal Instruction. The purpose of this committee is to give instruction to all Virginia physicians who desire it. It is composed of two representatives each from the Medical College of Virginia, University of Virginia, and the Medical Society of Virginia. He said that, to put across a program, they had tried to secure assistance from several sources and had at last found one which seemed interested. This agency—the Commonwealth Fund—had looked over their proposal and would present the matter to their Board with a recommendation for an appropriation of $10,000 for the work of this committee, contingent upon the raising of $2,500 by the doctors of Virginia. If the Board is interested, it is probable that we may secure this help for two years. A general discussion followed Dr. Sutton's explanation, after which it was moved, seconded and unanimously adopted that the Council recommend to the House of Delegates that we appropriate the amount of $2,500 to secure the appropriation of $10,000 from the Commonwealth Fund for the furtherance of pre-natal and post-natal instruction in this State. Dr. Clarkson offered a motion that this matter be referred to the House at the afternoon session. Seconded and carried.

There being no further business, the Council adjourned.

House of Delegates

The first meeting of the House of Delegates of the Medical Society of Virginia was held at the Patrick Henry Hotel, Roanoke, Virginia, October 6, 1931, at 2:00 P. M. The meeting was called to order by the President, Dr. J. Allison Hodges, Richmond. After roll call, which showed a quorum present, Dr. Hodges asked Dr I. C. Harrison, President-Elect, of Danville, to preside.

The first action was the approval of the last printed minutes of the House of Delegates Dr. Clarkson moved that the reading of these minutes

be dispensed with and that they be approved as printed. Seconded and carried.

The report of the mid-winter meeting of the Council was then presented as follows:

Minutes of Council Meeting
February 17, 1931

The Council of the Medical Society of Virginia held its mid-winter meeting in the Society's office, 104½ W. Grace Street, Richmond, on February 17th, at 2:30 P. M.

Those present were: Dr. J. Allison Hodges, President; Dr. I. C. Harrison, President-Elect; Drs. R. D. Bates, P. St. L. Moncure, R. W. Miller, Wright Clarkson, J. R. Gorman, and Percy Harris, from the First, Second, Third, Fourth, Sixth and Seventh Congressional Districts, respectively, and Miss Agnes V. Edwards, Executive Secretary-Treasurer of the Society.

The President said that the Society's work should rightly be considered under three divisions—scientific, business, and educational—and he thought it well to discuss our affairs under these headings.

The financial statement for the first four months was presented, showing disbursements and unexpended appropriations against the budget as approved at the Norfolk meeting. The statement showed that the Society is living within its income and the report was ordered received and filed.

At this time, Dr. Harrison asked the opinion of the Council in paying expenses of lecturers at clinical meetings held under the auspices of the Department of Clinical Education. The President stated that this is left in the hands of the President-Elect, an appropriation of $500.00 having been made in our budget for the work of the Department. This appropriation should, of course, provide for expenses of the executive secretary of the Department, such as stationery, postage, etc., and the balance could be used for the expenses of lecturers, as Mr. Eutsler gave his services gratuitously as part of his work with the Extension Department of the University of Virginia.

Dr. Moncure asked if it were necessary for the Department of Clinical Education to send out letters with regard to the All-Day Clinical meeting of the Norfolk County Medical Society, as that Society would send notices. Dr. Hodges said that, from reports which had come to his attention, he felt it a decided advantage to have letters sent by both the local societies and the Department of Clinical Education, to invite doctors to the meetings.

As to the selection of specialists to conduct clinics, it was stated that the President-Elect had authority, in cooperation with local societies, to use such clinicians as they might elect, the present idea being that it would be best to secure those within the State, as far as possible, as we have much good material, our budget is limited, and it is our wish to help all councilor districts.

Under the heading of reports from Committees, a letter was read from Dr. John O. Boyd, chairman of the Medical Economics Committee, in which he stated that he had been talking with a representative from the Aetna Company, with regard to Physicians' Indemnity Insurance for members of our Society. That Company has offered our members a rate of $12.50 as annual premium for a policy now costing individual members $15.00, when we have 1,001 members insured with them. Dr. Boyd had approved a letter to be sent members of one of the local societies, asking their cooperation in this plan. It was also stated that the Aetna Company would arrange to have a representative address the members of County Societies with a view to increasing policyholders in this State, if this plan is approved by the officers of the State Society and is agreeable to local societies. Dr. Moncure stated that he thought this a most important step for the Society and would like to move that a letter be sent all component and district societies, along the lines suggested by Dr. Boyd, asking them to present this matter to their members and to urge them to protect themselves with indemnity insurance. This motion was seconded and adopted.

A letter was next read from Dr. J. W. Preston, chairman of the Committee on Medical Education and Hospitals, in which he stated that the work of his committee had consisted chiefly in their endeavor to keep in as close touch as possible with the other educational departments of the Society and the State, and such work as they have been able to do through their membership in the Advisory Board of the Department of Clinical Education in conjunction with the two State medical colleges. He feels that steady progress is being made along the line of educational matters. It was moved that this report be received and filed.

Dr. Stuart McGuire, chairman of the Library Committee, sent a letter stating that it is hoped construction of the Library of the Medical College of Virginia and the Home of the Richmond Academy of Medicine will be begun shortly, and that the completion of this building will afford the Medical Society of Virginia the facilities it needs for its headquarters and its library. This report was ordered received and filed.

Dr. Wyndham B. Blanton, chairman of the Committee on History of Medicine, sent a letter stating that to date only 129 members of the Society had purchased the first volume of the Society's history of medicine in Virginia, and that, in all likelihood, material for the second volume would be in shape to turn over to the publishers in June. He asked the authority of the Council to negotiate with the William Byrd Press to put out this second volume on the same conditions under which they published the first volume. Dr. Moncure said that he thought the first volume was a magnificent book and one of the best moves ever made by the Society and he felt that all means possible should be used to promote its sale. He moved that Dr. Blanton be requested to go ahead with his plans for publication of the second volume in accordance with his suggestion. This motion was seconded and carried.

A letter was presented from the Public Relations Committee, through its secretary, Dr. W. O. Bailey, stating that the chairman, Dr. G. F. Simpson, had prepared a letter to be sent to members of the State Society and the various component societies, with regard to the work of that committee against the invasion of State and Federal medicine. Dr. Hodges stated that he bad read and approved the letter which had also been sent all members of that committee for approval. Dr. Simpson asked for an appropriation of $500.00 for the work of his committee in visiting the various societies and for necessary correspondence. The Council, in their discussion of the report of this committee, thought it would be well to publish in the Virginia Medical Monthly the letter which had been approved and later to

send it to members of the Society, if believed expedient. It was also suggested that members of the Committee appear before the various societies as often as possible with a view to acquainting the members with the dangers of State and Federal medicine and how it is encroaching upon the practice of private practitioners. It was felt that this Committee might use as much as $60.00, if found necessary for the furtherance of its work. It was moved, seconded and carried that the letter of this Committee be published first in the MONTHLY and later be sent to individual members, if deemed advisable.

Dr. Hodges reported that the Committee on Tuberculosis Clinics, of which Dr. C. L. Harrell is chairman, had a meeting with the State Board of Health. Dr. Harrell expressed himself as being fairly favorably impressed by the work being done by the State Board of Health and urged that our doctors should be more particular in making early diagnosis of tuberculosis.

Dr. Charles R. Grandy, chairman of Committee on Group Societies, was prevented by sickness from attending this meeting, but sent twelve copies of the report of his committee, that each councilor might study the suggested plan for the establishment of group societies to care for educational and scientific matters, with the request that each councilor would criticise the plan frankly and offer suggestions. The Secretary was requested to secure and color maps like the ones Dr. Grandy presented and send the two maps to each councilor to be studied in connection with the written report.

In reporting on the work of the Department of Clinical Education, Dr. Harrison gave the names of the places at which clinical meetings were scheduled in the various councilor districts, and told of the formation of the Joint Committee on Pre-natal and Post-natal Instruction, as approved at its meeting on December 11th. It was moved by Dr. Moncure, seconded and carried that the minutes of the first meeting of the Committee of Six be read by Dr. Harrison and be published in the MONTHLY, should he deem it advisable.

The councilors gave reports on the societies in their districts and some questions were asked as to the best plans of procedure for the clinical meetings. These were answered by Dr. Hodges and councilors who had had experience with the clinical meetings.

It was moved, seconded and carried that October 6, 7 and 8, 1931, should be dates for the sixty-second annual meeting of the Society in Roanoke.

Dr. Hodges spoke of plans he had for a special program for clinics and papers at the Roanoke meeting. It was moved, seconded and carried, that he select such men as he thinks best to cooperate in putting over this extra program.

Dr. Hodges asked for suggestions as to increasing the Society's income. In this connection, the Secretary was instructed to send each councilor a list of non-members in his District, that he might try to interest these doctors in joining the State Society.

Dr. Hodges appointed Drs. R. W. Miller and Wright Clarkson as a committee, with the treasurer, to prepare a tentative budget for next year, after the books had been audited, their report to be presented to the Council at its meeting in Roanoke.

The Council approved the proposal of Lunenburg County Medical Society to become part of the Post-Graduate Medical Society of Southern Virginia, should it meet with the approval of that organization.

It not having been found feasible to have a gathering of the secretaries of component societies at this time, it was ordered that arrangements be made, if possible, for a Secretaries' dinner at the Roanoke meeting.

Dr. Hodges said that in 1928, the Society inaugurated a plan for the continuous education of its members through the Department of Clinical Education, but now it was thought wise to enlarge this educational feature, so as to have a circle of education to embrace the continuing education of practitioners in their own communities under the direction of the Department of Clinical Education, the education of special groups under the guidance of the Joint Committee on Pre-natal and Post-natal Instruction, and now the education of the public through a Joint Committee on Public Health Education, thus contemporaneously teaching medicine to its members and health to the people. He asked that the Council approve his plan for the appointment of this Joint Committee on Public Health Education. It was stated that he, as President, has the right to appoint such committees as he deemed proper, but, in view of his request, Dr. Clarkson moved, seconded by Dr. Miller and carried, that the Council approve Dr. Hodges' plan for the appointment of this Joint Committee on Public Health Education, he to be first chairman of a committee of five and to name the other four members. Dr. Hodges then said he would appoint Drs. Charles R. Grandy, N. T. Ennett, Philip Smith and D. C. Smith as the other members of this Committee.

There being no further business, the Council adjourned.

AGNES V. EDWARDS, *Secretary.*

Approved:

J. ALLISON HODGES, M. D.,
President.

May 8, 1931.

It was moved, seconded and carried that this be approved.

The following reports were presented by Miss Agnes Edwards:

Secretarial Report

TO THE PRESIDENT AND MEMBERS OF THE HOUSE OF DELGATES:

At our 1930 meeting we reported a membership of 1,841. Since then we have gained 77 new members and lost a total of 64 — 36 by death, 21 by resignation and dropped 7, making a total of 1,854 members—a net gain of 13.

We have had a busy year at the headquarters office. The Council held its mid-winter meeting and the various committees have shown quite a bit of activity. While our income is slightly less than last year (which might be expected), there seems an increased interest in Society matters.

Last year we reported 52 component societies, including 88 counties and the City of Alexandria. This year we have 51 component societies, as the Lunenburg doctors asked to be included in the Post-Graduate Medical Society of Southern Virginia and this request for consolidation was granted.

James City County Medical Society was revived this year and includes some New Kent County doctors in its membership.

The doctors of Fredericksburg, Va., met in September and decided to organize as the Fredericksburg Medical Society (embracing the City of Fredericksburg, and the Counties of King George, Spotsylvania, Caroline and Stafford). In a request for a charter submitted to the Council today, they ask that all previous charters covering the Fredericksburg Medical Association, which has always included the same territory but been known under various names, be revoked. This does not increase the number of counties which we have chartered, but does show a greater interest in the Society, which we feel is more to be desired.

Our Society was represented at the Philadelphia meeting of the American Medical Association by the regularly elected delegates—Drs. Southgate Leigh, J. W. Preston and E. C. S. Taliaferro.

The President, Dr. J. Allison Hodges, appointed a number of special committees in accordance with action taken by the House of Delegates last year. These were listed in the January issue of the VIRGINIA MEDICAL MONTHLY—our official organ. He also appointed Dr. A. W. Hammond, of Amsterdam, on the Membership Committee, to fill the vacancy caused by the death of Dr. Charles F. Rinker and Dr. Bayard Carter was appointed to fill a vacancy on the Maternal Welfare Committee.

We greatly appreciate the interest shown in our meeting by the Medical Society of the State of North Carolina, which organization appointed eight delegates to attend our Roanoke meeting.

Our members have cooperated with us splendidly this year and our office is most appreciative of the help given.

AGNES V. EDWARDS,
Secretary.

It was moved, seconded and carried that this report be accepted.

Miss Edwards stated that the auditor's report would appear in the printed minutes in the December issue of the MONTHLY, but gave figures covering receipts and disbursements for the Society, the VIRGINIA MEDICAL MONTHLY, and the Medical Defense Fund, in accordance with the Auditor's report, which follows:

Financial Report from October 1, 1930, to September 30, 1931

THE OFFICERS AND COUNCILORS, MEDICAL SOCIETY OF VIRGINIA,

RICHMOND, VIRGINIA.

GENTLEMEN:

We have made an examination of the accounts of the MEDICAL SOCIETY OF VIRGINIA, RICHMOND, VIRGINIA, for the fiscal year ended September 30, 1931, and submit herewith our report comprising the following financial statements and our comments thereon:

EXHIBITS

"A" Balance Sheet.
"B" General Fund—Receipts and Disbursements.
"C" Legal Defense Fund—Receipts and Disbursements.

Comments

We checked in detail the cash receipts and disbursements of record and established by communication with the First and Merchants National Bank, Richmond, Va., the funds on deposit.

Securities owned were inspected and the revenue from them was accounted for.

Because of approaching meeting of the Society and the expressed desire of the officers to submit this report thereat, the amount of unpaid bills applicable to the fiscal year under review are shown at the amount estimated, by the Secretary-Treasurer, to be owing. Likewise, the amount of unpaid dues is shown at the collectible value estimated by that officer. We were informed that dues for years prior to 1930 have not been included in the latter sum.

The Secretary-Treasurer is bonded in the sum of $3,000.00 and the office furniture is insured, against loss by fire, for $1,000.00.

Respectfully submitted,

A. M. PULLEN & Co.,
Certified Public Accountants.

Balance Sheet—September 30, 1931
Exhibit "A"

ASSETS

GENERAL FUND:			
Cash—First & Merchants National Bank:			
Checking Account			$ 312.21
Saving Account		$ 4,050.00	
Accrued Interest, not credited		30.37	4,080.37
			$ 4,392.58
Dues from Members (Estimated Collectible value) 1931 Annual Dues, 400 @ $5.00			2,000.00
Accounts Receivable:			
Advertisers in Virginia Medical Monthly			830.63
			$ 7,223.21
LEGAL DEFENSE FUND:			
Cash—First & Merchants National Bank		$ 3,211.33	
Accrued Interest not credited		8.49	
		$ 3,219.82	
Securities Owned:			
First Mtg. 6% Note, due 4-2-32	$1,000.00		
Coll. Trust 6% Bonds, due 4-1-34	1,000.00		
Coll. Trust 5½% Bonds, due 11-1-32	4,000.00		
		6,000.00	
			9,219.82
Total Assets			$16,443.03

LIABILITIES

GENERAL FUND:		
Accounts Payable—Estimated Outstanding Bills	$ 763.93	
Surplus	6,459.28	
		7,223.21
LEGAL DEFENSE FUND:		
Surplus		9,219.82
Total Liabilities		$16,443.03

General Fund—Receipts and Disbursements
For Fiscal Year Ended September 30, 1931
Exhibit "B"

RECEIPTS

VIRGINIA MEDICAL MONTHLY:			
Advertising		$6,947.37	
Subscriptions:			
Members	$3,087.36		
Non-members	384.70		
		3,472.06	
Interest on Bank Deposits		57.61	
			$10,477.04
MEDICAL SOCIETY OF VIRGINIA:			
Dues—Members		$4,633.92	
Interest on Bank Deposits		57.60	
Miscellaneous		12.50	
			4,704.02
Total Receipts			$15,181 06
Balance, October 1, 1930			4.560.55
Total Receipts and Balance			$19,741.61

DISBURSEMENTS

VIRGINIA MEDICAL MONTHLY:			
Salaries (Apportioned):			
Secretary-Treasurer	$1,800.00		
Clerical Assistance	660.00		
		$2,460.00	
Preparation of Journal (including cost of distribution)		7,692.53	
Rent, Fuel, Janitor and Telephone		291.42	
Repairs and Replacements—Office Furniture		42.87	
Stationery, Printing and Office Supplies		50.90	
Office Postage		36 50	
Audit Fee (Apportioned)		40.00	
Miscellaneous Expense		9.20	
			$10,623.42
MEDICAL SOCIETY OF VIRGINIA:			
Salaries (Apportioned):			
Secretary-Treasurer	$1,800.00		
Clerical Assistance	660.00		
		$2,460.00	
Rent, Fuel, Janitor and Telephone		300.21	
Stationery and Office Supplies		88.88	
Postage		182.00	
Reporting Annual Meeting		134.35	
Officers' and Councilors' Expense		71.97	
Badges and Programs		112.70	
Repairs and Replacements—Office Equipment		42 88	
Department of Clinical Education		500.00	
Committee on History of Medicine		600.00	
Committee on Scientific Work		88.16	
Committee on Child Welfare		13.50	
Committee on Public Relations		2.30	
Audit Fee (Apportioned)		40.00	
Attorney's Fee		50.00	
Miscellaneous		38.66	
			4,725.61
Total Disbursements			$15,349.03
Balance—September 30, 1931 (Exhibit "A")			4,392.58
Total Disbursements and Balance			$19,741.61

Legal Defense Fund
For Fiscal Year Ended September 30, 1931

Exhibit "C"

RECEIPTS

Contributed by Members		$ 8 00
Interest on Bank Balance:		
Credited to July 1, 1931	$ 50.10	
Accrued to October 1, 1931	8.49	
		58 59
Interest on Securities Owned		402 50
Sale of Securities		2,500.00
Total Receipts		$ 2.969.09
Balance—October 1, 1930		2,284 06
Total Receipts and Balance		$ 5.253.15

DISBURSEMENTS

Securities Purchased	$ 2,033.33
Balance—September 30, 1931 (Exhibit "A")	3,219.82
Total Disbursements and Balance	$ 5.253.15

It was moved, seconded and carried that this report be adopted.

The next order of business was the reports of Standing Committees.

Report of Committee on Scientific Work and Clinics

Following the appointment of the Committee, October, 1930, in Norfolk, Virginia, no business was transacted until early in 1931. At that time there

was some correspondence between members of the Committee and with the Committee on Arrangements relative to the plans for Scientific Exhibits at the annual meeting of the Society in Roanoke, Virginia.

April 15, 1931, the chairman sent out more than one hundred invitations to the various districts, county and local medical societies, hospitals and other institutions in the State requesting that applications for Scientific Exhibits be made promptly. Very few replies were received and most of those received were in the negative. The work was carried forward, however, by a person to person canvass and during the summer and early fall a very creditable series of Scientific Exhibits was arranged.

In this connection the chairman wishes to call attention to the signal service rendered by Dr. J. S. Horsley, Jr., of Richmond, who was most active in making contacts with prospective exhibitors. He also wishes to express appreciation for the interest taken in the work of the Committee by Dr. J. Allison Hodges, the President of the Society, for the hearty co-operation of Dr. W. P. Jackson, the Local Chairman in Roanoke, and for the co-ordination made possible by Miss Agnes V. Edwards, the Executive Secretary.

The Committee held no formal meetings, all business being transacted by correspondence. The sum of $100.00 (one hundred dollars) was not drawn upon prior to the time of the annual meeting except to provide stationery. The balance has been turned over to the local chairman to provide for the space and other requirements of the exhibitors. It may be said here that the money allowed is not adequate for this purpose this year and it is hoped that some additional allowance may be made available to the Committee in future years.

Respectfully submitted,
J. Shelton Horsley, Jr.,
J. B. Nicholls,
C. B. Morton, *Chairman.*

It was ordered that this be received and filed.

Report of Committee on Legislation and Public Health

The President and Members of the House of Delegates of the Medical Society of Virginia.

Gentlemen:

By reason of fact that no session of our State Legislature has been held since our last annual meeting, there has been very little of importance demanding the attention of the Committee on Legislation and Public Health.

Our attention was called in January to H. R Bill 7884, which was known as the District Vivisection Bill, introduced by Representative Zihlman, prohibiting experimentation upon dogs in the District of Columbia and providing a penalty for violation thereof. Immediately upon receipt of notification that this bill was pending, your Committee wrote our Virginia representatives in the Senate and House, protesting vigorously against this bill and enclosing a copy of a resolution passed by the Southern Medical Association at its Louisville meeting, last year, giving the views of the medical profession of the South on vivisection legislation. Your chairman received practically unanimous replies from all our representatives, many of whom agreed actively to oppose this bill. The bill died at the expiration of the session of Congress on March 4th.

The American Medical Association, through its Committee on Medico-Legal Problems, adopted a resolution looking to the establishment of criminologic institutes in each of the several States, the purpose of which is to study the causes and prevention of crime in the several States. A copy of this resolution has been sent me so recently that I have not had the opportunity of communicating with the other surviving member of our Committee and I can only state it meets with my personal approval and I recommend that it be referred to the incoming Committee for its consideration and action.

No report of a committee on Public Health in the State would be complete without mention of the blow our State Health Department received in the death of our beloved and esteemed Health Commissioner, Dr. Ennion G. Williams. His services on the Committee on Legislation and Public Health have been most valuable and the loss of Dr. Williams from affairs pertaining to public health will be felt for a long time to come in our Society.

The State Board of Health has been most fortunate in securing the services of Dr. Warren F. Draper, Assistant Surgeon General of the United States Public Health Service. He has had considerable experience already in affairs pertaining to our State and, as a successor to Dr. Williams, in the opinion of your chairman, no better solution could have been found.

Respectfully submitted,
Alfred L. Gray, *Chairman.*

Dr. Wright Clarkson made a motion that this report be received and filed and with it a resolution that we express to Dr. Gray our regrets that he is not with us today and appreciation of the work he has done for us in the past. Seconded and unanimously carried by a rising vote.

Report of Committee on Publication and Program

The work of the Committee on Publication and Program during the past year has been of a routine nature. The publication and distribution of the official organ of the Society, the Virginia Medical Monthly, has been conducted along usual lines, only certain minor details of arrangement of the layout in the text, having been made. This State journal appears to compare favorably with journals of a like character. While certain changes may be possible that may tend to improve it, these changes have not been deemed wise to make at this time because of the added costs involved.

The Program Committee has had several meetings during the year, making especial effort to arrange the program of the Roanoke Session to the best advantage. In these meetings of the committee the President of the Society has taken an active and influential part. Unusual efforts were put forth to bring about a working schedule whereby the members may have every opportunity to participate in the several sessions of the various parts of the program.

Respectfully submitted,
Alexander G. Brown, Jr.,
Chairman.

Dr. Wright Clarkson stated that he had heard some criticism about a lack of discussion of papers. As the program is now arranged, we have no room for discussions and he wondered what the consensus of opinion would be as to choosing papers. He stated that we often get more out of the discussion than the reading of a paper and thought it might be well to have fewer papers and more time for discussion. He asked for an expression of opinion. Dr. M B. Hiden said that the main trouble is that

a man will turn in a paper taking ten minutes and then want to talk thirty minutes. If he is well known, he is allowed to talk more than the limited time. He suggested that the program committee shall hold each man to his allotted time. It was stated that this was covered by the By-Laws. Dr. W. B. Martin said he had had a year's work on the Program Committee, and in order to limit the papers on the program to a number that may be adequately cared for with discussions and to arrange a program of greatest value to the Society, he presented the following resolution:

That the Program Committee be instructed to act as a committee of censors and that they select from the papers submitted such papers as may be deemed necessary to provide an adequate program and that they further be empowered to require the submission of an adequate abstract of each paper. This was seconded and carried.

Report of Medical Economics Committee

Mr. President and Members of the House of Delegates:

The two questions that we feel need the attention of the Economics Committee are Liability Insurance and the tendency to State and Corporation Medicine.

Liability Insurance—Your Committee has endeavored to get members of the Medical Society of Virginia to take a policy in the company that carries the majority of the insurance for our members, first, for their own protection and secondly to get a better rate.

Our efforts have not been able to show an increase, there being 720 policyholders, which is slightly less than one year ago.

A review of the claims against members of the medical profession shows such an alarming increase that it behooves us to be more careful for our own protection and to cooperate closely with the insurance companies for our mutual benefit.

A review of the revenues received and the expenditures of one of these companies, we feel will be food for thought.

The total receipts for liability insurance in the State of Virginia paid by our profession from 1917 to the end of 1928 were $45,802.00; they paid in claims $24.268.00 and have claims still pending of $25,000.00. You will see this leaves about $19,000 00 for writing the insurance and overhead for ten years, leaving very little profit.

For the year 1929 this company collected $7,613.00 in premiums; they have paid to date $5.206.00, have pending $1,400.00. You will see the marked increase in losses for this year.

The estimate for the year 1930 is still more discouraging, it being necessary to make an estimate because the revenues and claims cannot be completed until the end of the succeeding year.

The company has estimated receipts of $8,658.00 for 1930, losses on account of 1930 claims and prior thereto paid are $5.438.00, plus outstanding claims and suits of $1.450.00, making a total of $7,888.00.

A study of these figures will show that the company shows very little profit in this line of business.

Consideration of the receipts and expenditures as furnished above will show that there has been a substantial increase in the losses since the beginning of 1929, as compared with the losses prior to that date, which would indicate an increase in claims and suits brought against doctors. This condition is not limited to Virginia, but exists over the entire country. This is probably due to industrial and financial developments, and the fact that people have nothing better to do than seek money from every possible source, based upon every possible excuse.

It is likely that this condition will continue to grow worse and that any excuse whatever will be used for bringing claims and suits for damages against members of the profession until such a time as the claimants are able to secure money from other sources.

In view of these facts we want to urge that all of our members give closer attention to handling all their patients, that they keep accurate records of same and insist that every patient who refuses to abide by their instructions and prescriptions, particularly when refusing to have X-ray pictures taken, sign a card to be preserved as a matter of record setting forth exactly what the doctor told them they needed, and then to file such a card in order to refute any contention that might later arise.

We want to recommend that the Society urge all local societies to appoint a committee to handle all cases where some member of the Society is approached and asked for his opinion as to whether or not some other member had properly cared for a certain case, the committee's function being to investigate the case and call in those who are interested in the matter and insist upon every doctor who is approached on the matter on behalf of the plaintiff, being fully informed in regard to the fact before he expresses an opinion which might be construed as a criticism of the attending physician.

We are attaching herewith a copy of the report* submitted by a special committee of the members of the New Haven Medical Society, which sets forth the relationship of the Society to the Insurance Company and to the public, and also contains a copy of the amendments to the by-laws which created and provided for the appointment and operation of the Committee in question.

Since this Committee has been functioning in New Haven there has been a decided dropping off in the number of cases arising from the practice of the profession in New Haven.

Unless some steps are taken either as suggested, in this report or in some other way, to lessen the number of claims arising against the profession, a marked increase in the rate of our insurance will be inevitable.

In this connection we want to call to your attention the frequency of suits being brought or of threatened suits against members of the medical profession for malpractice in many cases where grounds for the alleged liability are not well founded. The legal and medical professions are too dependent upon one another in medico-legal matters for us not to have closer cooperation. Some plan should be worked out whereby members of the bar will inform themselves fully in each case and be discouraged from bringing action against doctors in cases where the evidence plainly shows the doctor is not liable.

We wish to recommend that overtures be made to the Virginia Bar Association in regard to this matter; and after due consideration, if feasible, to have a representative from each society make an address before the other on some suitable medico-legal subject at each annual meeting.

State and Federal Medicine—The Public Relations Committee of the Medical Society of Virginia has done excellent work during the past year in making a study of this subject and also trying to acquaint members with the information they have acquired. It seems to us that mention of this subject should be made by this committee and the grave dangers foreseen that confront our profession called to your attention.

There are numerous causes that are tending to bring about State Medicine, among which we might mention high cost of hospital and medical care; corporations finding it more economical to employ their own physician; our National Government offering free hospitalization and medical care to all ex-service men irrespective of the disability being in any way connected with the service, etc, but one of the greatest causes as seen by this committee is due to some members of the medical profession in charging their patients exorbitant fees, more than they can pay without being handicapped for a long time. May we suggest that the profession consider this question very seriously and be encouraged to always make a reasonable charge, and in this way keep the good will of our patients instead of furnishing fuel for a conflagration that is rapidly assuming such dangerous size that it threatens to destroy the private practice of medicine.

Respectfully submitted,

M. H. Harris,
E. G. Scott.
John O. Boyd, *Chairman.*

***Report of Committee of New Haven Medical Society Referred to in Report of Medical Economics Committee.**

Mr. President and Members of the New Haven Medical Association:

Your Committee appointed to investigate and analyze the situation regarding the prevalence of malpractice suits existing among our members, as stated by the Ætna Life Insurance Company, report to you as follows:

There seems to exist in the minds of many men a belief or an impression which we often hear expressed in these words: "Let the Insurance Company pay. They have plenty of money." Such an idea is absolutely incorrect. The Insurance Company does not pay. It is the policyholder, the one insured, who always pays.

What actually happens in any form of insurance, be it life, fire, accident, liability or any other, is that a group of persons deposit with an insurance company a certain sum of money which the company agrees to administer in a certain way, the company receiving a just remuneration for its work. If at any time the amount deposited is not enough for the company to carry out the agreement, then the members of the group must contribute more money because the Insurance Company will be compelled to increase the rate on future insurance.

Applying this rule to the matter under investigation by your committee, we find that the members of the New Haven Medical Association have been depositing annually with the Ætna Life Insurance Company the same basic rate as has been charged throughout the State of Connecticut. In return for this the Ætna Life Insurance Company agreed to defend the contributing members against suits for malpractice and also to pay any damages assessed against them.

The experience in the entire State exclusive of New Haven shows that the losses in New Haven were, roughly, six times as great as the rest of the State. It is evident that the reason for this great discrepancy is not that New Haven doctors are six times as negligent as doctors elsewhere or that they are six times as eager to aid in promoting justice.

In accordance with the rule above stated, that it is the insured and not the company who always pays, the Ætna Company has notified this Association that in future the payments must be four to six times more than they have been. The only alternative to this is that the Association shall immediately devise and put into operation some radical method for improving the deplorable condition which now exists regarding malpractice suits in New Haven.

Your Committee understands that a part of its duty is to present recommendations for accomplishing this.

The first task of your Committee was to inquire into the causes of malpractice suits here and elsewhere. On going over the suits brought or threatened during the past seven years we find that the causes may be divided into two general classes, viz., legitimate and illegitimate. Among the legitimate causes are, failure to make use of all the modern aids to a diagnosis such as X-ray, etc., or the omitting to remove all foreign substances before closing a wound or gross neglect in the subsequent care of the case. Many cases can be saved by the early settlement of legitimate ones but to know which are legitimate cases it is necessary to get full information at an early date. A few cases in which there is a question of doubt regarding negligence come to trial.

The great bulk of malpractice suits belongs in the illegitimate class. The causes of these suits may be put into two divisions. First, general notoriety. That is, newspaper or person to person information to the effect that somebody instead of paying the doctor brought suit against him and collected a few hundred dollars. We may put this down as causing at least 25 per cent of the suits.

The other division of causes, the one which accounts for fully 75 per cent of all malpractice suits, is the indiscreet or slurring remark of some doctor, some fellow practitioner. This remark may be due to thoughtlessness and crass stupidity or a desire to obtain a little cheap prestige and some financial gain or it may be due to spite, jealousy and personal venom.

It is a curious situation that a medical gentleman either by word of mouth or physical act should intentionally or unintentionally bring a brother practitioner into disrepute; be the cause of a suit brought against him and indirectly cause obloquy to be cast on the profession of which he himself is a member. Particularly is it surprising because he knows or should know that he will have to contribute his share toward any expenses or monetary damages incurred by the other doctor or insurance company as a result of his indiscretion.

We desire to call the attention of every member to two things which will become of great value in case a suit is brought or threatened against him. First, keep a careful and complete record of every case, making explicit note of any direction given to the patient for him or her to act on and later state whether or not the patient carried out your directions. Second, in case you advise a certain procedure as an X-ray picture or a laboratory finding and the patient refuses to have it done, get the patient to sign a statement of the fact. If he refuses to do this, then make a complete record of it in your history. Many suits have been killed by such records.

It must be remembered that the rights of the patient as well as those of the doctor are to be considered and that no scheme which prevents patients from securing their just rights will ultimately result in the good of the profession. It must also be remembered that no scheme which tends to prevent doctors from testifying as their conscience may dictate is to be considered. It is proper, however, to insist that no member of the profession has the right to criticize the acts of another member without taking the trouble to learn the facts and circumstances of the case as they were presented to that member at the time. With this in mind and after a careful investigation of the entire situation, your Committee offers the following recommendations to the end that improper and unjust criticism will not be voiced and improper and unjust claims and suits for malpractice will be discouraged and that justice will be done every legitimate claimant and equal justice done every member of our Association.

Amendment to the By-Laws Formally Adopted by the New Haven Medical Society, April 16, 1930:

ARTICLE VIII.

Committee on Medical Ethics and Deportment.

Section 1. There shall be a committee of the Association to be known as: The Committee on Medical Ethics and Deportment. It shall consist of eight appointed members and the acting President of the Association as an ex-officio member with voting power. The President shall appoint this committee. When first made up, two members shall be appointed to serve for the term ending at the annual meeting in January, 1931, two until the annual meeting in 1932, two until the annual meeting in 1933, and two until the annual meeting in 1934. Thereafter two members shall be appointed each year by the incoming President at the annual meeting to serve for four years. Any vacancy occurring in the Committee shall be filled by the President at once.

Sec. 2. It shall be the duty of this Committe whenever any claim of malpractice against a member of the profession is made or threatened to be made, to investigate the case and to advise concerning its handling in cooperation with all those concerned.

Sec. 3. It shall be the policy of this Committee and of the Society to respect the privilege of every member to testify in any case as his conscience and opinion may dictate, and the Committee shall not seek to prevent any member from so doing. It shall in all matters act with due regard to the rights of the patient.

Sec. 4. Whenever this Committee is informed that a claim of malpractice is made or threatened, the Chairman or Secretary shall, as soon as possible, summon a meeting of the Committee for the purpose of investigating the circumstances connected with the case. Stenographic minutes shall be kept of all meetings, and the proper expenses connected therewith shall be paid by the Association.

Sec. 5. It shall be the duty of every member of this Association to notify the Chairman or Secretary of this Committee of any malpractice claim made or threatened against him or against any other member of the profession and to appear before this Committee at any time when he may be called and give the Committee all the information he may possess regarding the case.

Sec. 6. It shall be the duty of every member of this Association who contemplates assisting in the preparation of a malpractice claim or suit or testifying in any such suit to first notify the Committee of his intention and give to the Committee his reasons therefor.

Sec. 7. No member of this Association shall make a charge for services or accept any compensation for acting with regard to a malpractice claim or suit unless the Committee shall consent.

Sec. 8. It is the policy of this Association that no member shall speak disparagingly of the treatment given by any other member until he has made himself thoroughly familiar with all the circumstances as they existed at the time of the treatment.

Sec. 9. A violation of any of the above rules by a member of this Association shall be deemed just cause for his discipline by the Association.

Sec. 10. It shall be the duty of this Committee to prefer charges

in the manner prescribed by Article 6 of the Constitution against any member of the Association who has voiced criticism without justification or without seeking full information as to all the facts or without consulting with the Committee.

Frank H. Wheeler, Chairman.
Ralph A. McDonnell.
George Blumer.
Francis H. Reilly.
S. J. Goldberg.
Samuel C. Harvey.
Fred W. Comstock.
Daniel F. Levy.
Thomas J. Sullivan.
Thomas H. Russell.

Dr. E. C. S. Taliaferro moved that this be received and filed. Seconded and carried.

Report of Committee on Medical Education and Hospitals

As a summary of the work of your committee on Medical Education and Hospitals during the past year it may be stated in brief that it has consisted chiefly in an endeavor to cooperate with the president and president-elect in the major undertaking of the Society as relates to graduate education, in the advancement of which both officers have been unsparing in their time and energies.

Prenatal and Postnatal Clinics

The one meeting of the committee was held January 20th conjointly with the Committee on Prenatal and Postnatal Clinics,, at which meeting concrete plans were made for the organization of this important work, the details of which plan will doubtless be embodied in a special report to your body.

As relates to the more important matters pertaining to education and hospitals in Virginia at this time, your committee would draw your attention to two movements which at no distant date will demand the consideration of all who are interested.

Increasing Number of States Requiring a Year's Internship Before Granting a Certificate

The one movement referred to is that of the steadily increasing number of States now requiring a year's internship, after the completion of a regular course in an approved college before admitting to a certificate to practice The number of such States is rapidly increasing, now comprising no less than seventeen, one out of every three States in the Union.

Increasing Number of Universities Offering Four Semesters Yearly

The other movement is that among the high grade medical colleges of the United States there are no less than eight universities now offering facilities of four semesters' study yearly, thereby enabling those who desire to do so to graduate in three years. In this connection attention is drawn to the fact that in accordance with the statute of Virginia, as at present constituted, a student of our State is required to show that his course of study has extended throughout eight months of four separate calendar years. At present there is no specific requirements as to an internship. The concrete problem here arising is to determine whether or not it may be arranged that students graduating from institutions which do not require courses of study extending throughout four calendar years may legally be admitted to take the examination and qualify as practitioners in this State. Likewise should it eventuate that the schools of our State find it feasible and to the advantage of all concerned to offer opportunities whereby the full course of study might be completed in three years, of four semesters each, the question arises as to whether supplementing this, a year's hospital service additional might be arranged and included as an integral part of the curriculum before granting a diploma and thereby meet the requirements of the law.

However this latter may be, your committee has found the authorities of both of our State medical colleges keenly alive to matters such as these under consideration and does not doubt that when the proper time comes for making a decision, as it surely will come, they would wish the medical profession of the State to have a voice. It therefore seems proper that your committee discuss these matters with you, and endeavor to acquaint you beforehand with the problems about to arise.

The Coming Need of More Hospitals Qualifying to Train Interns

Another problem which is of importance in the matter under consideration is the surprisingly few hospitals of our State which have up to the present afforded such facilities as to obtain a rating entitling them to be classed as suitable for training interns Should it so turn out that the requirement of a year's internship prior to admitting a graduate to examination or reciprocity in other States become general it is possible that, willing or unwilling upon the part of our State, we may be forced to conform in order to maintain our rating and at the last moment find ourselves unprepared.

These circumstances are stated not with any idea of immediate action but to indicate the rapid changes taking place in educational matters and to express the hope that when it becomes necessary to work out these changes the needed information may be at hand and all may cooperate.

Satisfactory Progress in Movement of Clinical Education

It is a source of gratification to your committee to be able to report, in so far as one may determine from observation during the past year, there has been a steadily increasing interest upon the part of practitioners throughout the State in educational matters The various clinics and demonstrations put on by the colleges and by local and district organizations have been exceptionally well attended. Upon the whole we believe there is good ground for the statement that perhaps never before in the history of medicine in Virginia has greater advancement been made in a similar length of time by the profession as a whole.

Respectfully submitted,
P. St. L. Moncure, M. D.,
W. O. Bailey, M D.,
J. W. Preston, M. D., *Chairman.*

Dr. P. St. L. Moncure, a member of this committee, stated, in explanation of this report, that we are not furnishing adequate training for interns. We should make our hospitals a unit in the education of these men. We ought to see if some means can be worked out whereby interns who go to hospitals can get adequate training. It was moved that the report be received and filed. Seconded and carried.

Report of Membership Committee

Dr. Isaac Peirce, a member of the committee, was asked to read a letter from Dr. J. A. White, chairman. Dr. White expressed regret at his absence for the third time in fifty-one years. He gave a list of members who had died during the past year and presented the name of Dr. J. Alli-

son Hodges, retiring President, for honorary membership. In accordance with the letter, Dr. Clarkson moved that Dr. Hodges be made an honorary member of this Society. Seconded and carried. Dr. Hodges, in a few words, expressed his appreciation of the honor. Dr. E. C. S. Taliaferro offered a motion that a telegram be sent Dr. White expressing regret at his absence. This was carried by a rising vote.

List of Thirty-six Members of the Society Whose Deaths Have Been Reported Since the 1930 Meeting

Dr. Charles Frederick Rinker, Upperville, Va., November 11, 1930.

Dr. James Maxwell Caskie, Remington, Va., November 4, 1930.

Dr. John Franklin McClellan, Kenbridge, Va., September 19, 1930.

Dr. Davis L. Shaver, Maurertown, Va., November 17, 1930.

Dr. Samuel Sterling Northington, South Hill, Va., October 27, 1930.

Dr. William Virgil Atkins, Blackstone, Va., December 7, 1930.

Dr. John Charles Burks, Roanoke, Va., December 5, 1930.

Dr. J. H. Moses, Ironto, Va., November 15, 1929.

Dr. Walter L. Devany, Dendron, Va., January 6, 1931.

Dr. Hugh T. Nelson, Charlottesville, Va., January 16, 1931.

Dr. Daniel Tatum Merritt, Nathalie, Va., January 19, 1931.

Dr. James W. Kelly, Big Stone Gap, Va., December 11, 1930.

Dr. William Edward Price, Meredithville, Va., January 22, 1931.

Dr. John H. Young, Burkeville, Va., December 22, 1930.

Dr. John William Humphries, Culpeper, Va., January 14, 1931.

Dr. Job Gustave Holland, Holland, Va., February 14, 1931.

Dr. William Carey Barker, Buchanan, Va., February 25, 1931.

Dr. John Edward Lincoln, Lacey Springs, Va., March 15, 1931.

Dr. Moreland Russell Irby, Richmond, Va., March 16, 1931.

Dr. Andrew Fullen Horne, Glade Spring, Va., March 3, 1931.

Dr. Robert Alston Martin, Petersburg, Va., April 1, 1931.

Dr. Richard P. Thornton, Republican Grove, Va., March 26, 1931.

Dr. Joseph Nicholson Barney, Jr., Fredericksburg, Va., April 30, 1931.

Dr. Ennion Gifford Williams, Richmond, Va., June 6, 1931.

Dr. Madison Redd Drewry, Cascade, Va., June 2, 1931.

Dr. John Wesley Carroll, Lynchburg, Va., June 3, 1931.

Dr. Albert Lee Barrow, Abingdon, Va., March 19, 1931.

Dr. Cooper Dave Kunkel, Pulaski, Va., June 11, 1931.

Dr. Charles A. Brown, Dillwyn, Va., January 14, 1930.

Dr. Leonidas Camden Dickerson, Stuart, Va., May 22, 1931.

Dr. William Andrews Lucas, Knoxville, Tenn., June 20, 1931.

Dr. Reid Arnold Rosser, Lynchburg, Va., July 3, 1931.

Dr. Charles Fenton Russell, Herndon, Va., July 16, 1931.

Dr. Levi Johnson Stump, Pocahontas, Va., August 31, 1931.

Dr. William Scarff Wiley, Bristol, Va.-Tenn., September 11, 1931.

Dr. Francis Page Nelson, Crozet, Va., September 24, 1931.

Report of Committee on Ethics and Judiciary

It was stated that no business requiring its attention had arisen during the year.

Dr. Hodges then took the chair, and the next business was the report of the Delegates to the American Medical Association meeting, which was presented by Dr. Southgate Leigh, as follows:

Report of Delegates to American Medical Association

The productive work of the American Medical Association, already extensive, has markedly increased during the past year.

From the Report of the Trustees: "A constantly growing demand for service to individual members and fellows and to component societies and constituent associations stimulated greatly increased activities on the part of the entire administrative personnel in the headquarters offices. Independent professional and lay groups have appealed to the Association for information and the public generally has utilized the services of the various councils, bureaus and departments to a degree hitherto unknown. It was to be expected from the experience of past years that the Association's work would expand but the development of the past year was not anticipated. The facilities of practically every department were subjected to a most unusual test involving constant alertness and most intensive effort. It seems apparent that the activities in which the Association must engage will in the future be largely extended, both in scope and in quantity. . . . .

"Expenditures for the past year showed a $30,000.00 increase. It is interesting to note a remarkable tribute to the integrity and fidelity of the members of the medical profession and of organizations dealing with the Association that in transactions involving more than $1,500,000.00 it was found necessary to charge off a sum amounting to less than $6,000.00."

Quoting Retiring President Morgan: "Physicians practicing away from the great city of Chicago do not sufficiently appreciate the marvelous work or the prodigious quantity that is being carried on for our daily benefit by that band of intelligent, highly skilled, loyal and devoted men and women who are working almost literally day and night at 535 North Dearborn Street."

And President Judd: "I want to call your attention to the important place that the American Medical Association holds in the social and political structure of our country. Few of us realize the scope of the work being done by those employed at Association headquarters. The American Medical Association is not only the largest but the most democratic and influential medical organization in the world. As such the responsibilities are enormous. It is necessary to keep this organization mov-

ing to meet the changing times, and to see that the medical profession is always ready to give the very best medical service to Society."

And Secretary West: "The American Medical Association never has been and never will be a one-man affair. Its strength has been created through the efforts, the labor, the devoted service of the men who serve on its official bodies. From the House of Delegates down to the smallest committee, the work of those who compose these bodies has been characterized by the most earnest effort and by the most unselfish devotion, and therein, my friends, lies the strength of the American Medical Association."

"If you believe that only one or two persons connected with the Association work, we want you to come to its headquarters and see 500 of the most industrious and earnestly interested employees to be found anywhere. I want to emphasize that invitation. We should like for all of you and for any fellow or member of this Association to come and get thoroughly familiar with the character and scope of the work that is done in that building. We should like for you to see that of the entire 500, from the printer's devil to the top, everybody works with a single purpose, to promote the art and the science of medicine, the interests of its practitioners, and the interests of the public whom we serve."

The membership of the American Medical Association is now over 100,000, with a fellowship of 65,000.

Speaker Warnshuis, in referring to the House of Delegates, stated as follows:

"It may be confidently asserted that your annual deliberations are conducted in a most efficient manner and that your minutes well express the policies, activities, and opinions of the profession of this nation. As officers and delegates, we should ever maintain this position and attitude in order that we may retain the public's confidence and respect."

The impending danger of State Medicine, which confronts the profession, was uppermost in the minds of the delegates and was considered by Reference Committees and by the House in executive session. During the latter meeting there was general debate and much interest shown. The delegates seemed especially pleased to know that Virginia, following the instructions of the 1930 meeting, had formed an active Committee on Public Relations, with local committees in various parts of the State.

The General Committee of the American Medical Association, which has this matter in charge, is composed of some of the most active and thoughtful members of the profession. Many of the States have fallen into line, but there is still much to be done to inform State and National Legislators, and educate the public.

The unfortunate action of Congress in providing medical and surgical care for all veterans, regardless of the cause of their sickness, is a positive step towards State Medicine.

In an effort to modify this law, the following resolution was adopted, by the House of Delegates and the American Hospital Association's assistance was requested:

"Whereas, The Federal government has inaugurated the policy of rendering medical and hospital benefits to veterans of the World War with non-service connected disabilities; and

"Whereas, This policy was inaugurated over the opposition of the American Medical Association; and

"Whereas, The policy now in force, if carried to its logical conclusion, involves the construction, the staffing, and the maintenance of a sufficient number of hospitals to accommodate the hospital needs of all the Veterans of the World War; and

"Whereas, Such a policy places the Federal government in unnecessary and unjust competition with the civilian hospitals and the medical profession of the United States; and

"Whereas, The present policy is of unequal benefit to veterans by reason of the fact that many disabled veterans cannot (for one reason or another), avail themselves of the benefit. Therefore, be it

"Resolved, That the House of Delegates of the American Medical Association petition the Congress of the United States and the American Legion to abandon the policy of rendering hospital and medical benefits to veterans of the World War with non-service connected disabilities, and substitute therefor a plan of disability insurance benefits with the following provisions:

"*First*, the creation of a Bureau of Disability Insurance in the Veterans Bureau as now constituted.

"*Second*, the issuance of a disability insurance policy to each veteran with a disability benefit clause, as follows:

"(a) The payment of a weekly cash benefit during a period of total disability, and

"(b) The payment of liberal hospital benefit sufficient to cover the hospital expenses of a veteran during a period of hospitalization for any disability. Such benefits to be paid to a veteran on satisfactory proof of total disability, and

"(c) Such other provisions as are necessary for the proper administration of the act. Be it further

"Resolved, That the proper officers of this Association be instructed to approach the officers of the American Legion with a view to securing the adoption of the policy above set out as a part of the legislative program of the American Legion; and, be it further

"Resolved, That each State Medical Association be requested to form a committee whose duty it will be to approach the State and local Legion posts throughout the country with a view to securing the adoption of this program by them."

This resolution requests the State Associations to confer with the local Veterans organizations with a view of getting them to agree to the amendment to the law, which is in such form that many veterans will prefer it to the present plan.

Your delegates would urge that the good work of the Public Relations Committee be continued, and that the profession of the State cooperate to the fullest extent.

Dr Judd suggested that all Medical Colleges make a point of teaching medical ethics to the students; called attention to the fact that the White House Conference was but poorly attended by the doctors; stressed the importance of the work of the New Bureau of Medical Economics; warned that inactivity on the part of the profession was responsible for much faulty legislation; urged the further development of Legislative and Public Relations Committees for the various States; advised the formation of a Bureau for the study of cancer and suggested that one day be set aside at each annual meeting for strictly clinical work.

A resolution from Michigan requested the appointment of a Commission to pass on the qualifications of specialists. This was sympathetically received by the House and referred to the Council on Medical Education for study and report.

Virginia is still backward in perfecting its county organizations. It is to be hoped that the work of the Public Relations Committee, so vital to the welfare of the profession, will stimulate the doctors in the unorganized counties to get together at least in "skeleton" societies.

By resolution of the House the profession is again urged to subscribe more freely to "*Hygeia*," which is now on a paying basis, due largely to efforts of the Woman's Auxiliary. By having a copy of *Hygeia* on every doctor's waiting room table, the efforts to educate the public in regard to the real status of medicine and medical organization will be greatly aided.

Medical Colleges were urged to pay more attention to placing their graduates in qualified hospitals, and to be more vigilant in preventing the graduation of unqualified students, especially by commercially tainted schools.

The House disapproved of the name of the "Commission on Cost of Medical Care," believing it to be misleading and harmful, but could find no way to make a change.

A resolution was adopted simplifying the appointment of substitutes for delegates or alternates.

The Woman's Auxiliary to the A. M. A., now taking a prominent place in the activities of organized medicine, has its program printed by the A. M. A. and reports its proceedings in the A. M. A. publications

Its membership is now 13,000.

Its efforts are most productive, especially in educating the public, and it works in entire harmony with the parent body.

Its Editor, Mrs. Freeman, has been most active in splendid publicity. She is the daughter of that nestor of the profession, Dr. W. W. Keen, of Philadelphia.

Dr. Keen himself, was not able to attend the meetings of the A. M. A., but through his friend, Dr. Tomlinson, of Delaware, sent the following message to the House of Delegates:

"The message is that he wished me to convey to the House of Delegates his heartiest wishes for a continuation of the splendid work which it has been doing and a hope that it will continue to do this. I want to add too, for Dr. Keen, that I am sure he is proud of the accomplishments of the American Medical Association, and it is his hope and the wish of his heart that the American Medical Association shall continue to grow and to grow, shining brighter and brighter, and like an unfixed star, rising higher and higher, until it shall have reached the zenith of its glory and radiate its greatness to the remotest corners of the earth."

The attendance at the Philadelphia meeting was large and the profession of Virginia was well represented

The scientific sessions and exhibits were of a high order.

Dr. E. H. Cary, of Dallas, was elected President-Elect and New Orleans named as the next place of meeting.

Respectfully,

SOUTHGATE LEIGH,
E. C. S. TALIAFERRO,
J. W. PRESTON,
Delegates.

Motion was made that this report be received and adopted, and the recommendation with regard to approaching the State and local posts of the American Legion be referred to the Committee on Public Relations. Seconded and carried.

The report from the Council meeting, held in the morning (see pages 606-7), was then discussed. The budget was read as approved by the Council.

Dr. Hodges explained that a legal opinion had been secured with regard to the Medical Defense Fund so that the Society might be in position to make use of such part of this money from year to year as they deemed necessary. It is not the desire of the Society to hoard money but to do good with it. He asked if this money belongs to us, would it not be possible to use it in the educational program which has been carried on throughout the State. He told of the appointment of the Committee on Prenatal and Post-natal Instruction as a part of the Department of Clinical Education, and asked that Dr. Sutton, its chairman, be given the privilege of the floor to explain the plan of the committee.

Dr. Sutton read excerpts from the paper presented by the Committee to the Commonwealth Fund, asking for financial assistance in putting over the program for pre-natal and post-natal instruction to Virginia doctors.

Dr. Southgate Leigh objected to the plan, fearing that it might lead to State medicine and asked that this report be given before a special committee, that they could have a heart to heart talk before going into the matter. Answering Dr. Leigh's objection, Dr. Hodges stated that no doctor's rights could be or ever would be infringed upon by this work, but that it was for the purpose of teaching doctors to be better doctors and was solely educational to dectors, and only to those doctors who might request it. It was education, pure and simple, and was not and never could be State medicine. Dr. I. C. Harrison explained that this work was for educating the physician and not for holding clinics for the people.

Dr. J. R. Gorman stated that at a meeting of the Council last Spring it was brought to his attention that the public was criticizing the profession. There was an editorial in the *Times Dispatch* to this effect, in which the medical profession was called blood suckers. The public is the one who pays for the medical man's ignorance. Some method of control of the practice of medicine and surgery certainly should be worked out, if not by this Society then by somebody else This movement would bring to the doctor in his office the instruction which makes him a better doctor.

Dr. J. A. Gibson said he had heard this discussion with a great deal of pleasure. It seemed to him that it was aimed at the rural physician. If the Universities have not educated the doctor in these methods then they have failed. The rural doctor has had no representation anywhere. He has remained in the background all the time. Why not tackle the 4,600 midwives in the State of Virginia? If you have any money to give or any instruction to give, start with the midwife, educate her or eliminate her. We want these midwives examined by somebody and they should come under the jurisdiction of the doctors in the counties.

Dr. F O. Plunkett stated that he was absolutely against State medicine, but when you talk of educating doctors, he was one hundred per cent in favor of that. Even though we graduate from a medical college we never learn medicine, because one has to study medicine as long as he lives. Very little training in obstetrics was given in the old days. Between eighteen and twenty-five thousand mothers

and two hundred thousand babies die every year from lack of knowledge of the psysician. The vast majority of these women and babies would be living today if we had had the proper medical education. He urged that we do not let this opportunity slip.

Dr. M. B. Hiden asked if the money could be used in whole or in part to eliminate the midwives that are not qualified and to educate those that are left and then let the rest be used to educate the doctors in the country if they wish it. Dr. Hodges stated that the money would not be used anywhere in the State unless it was wanted by the physicians in that section and upon their request.

Dr. Clarkson stated that he thought everyone was trying to do the right thing; that the discussion had given him a new light on the subject; that we all need a continuance of education; that he always learned from attendance upon medical meetings and he favored the Society's giving $2,500 to securing the $10,000 from the Commonwealth Fund if the Society could use it properly and control its use. He moved that the budget be adopted as read and that the $2,500 be given for the purpose of pre-natal and post-natal instruction with the understanding that the report as read by Dr. Sutton be amended that no money be expended in a local community without the local committee's consent. Seconded.

Dr. Moncure stated that the Council had acted in this matter and that it was only up to this body to accept or reject the recommendation of the Council. He said there was no State medicine in this idea but it comes under the heading of education and that the city doctor would be benefited just as much as the country doctor.

Upon Dr. Gorman's suggestion, Dr. R. A. Moore told of the splendid work which the Commonwealth Fund had put over in cooperation with the doctors of Farmville and the counties in that section in the establishment of the Southside Community Hospital.

The subject was further discussed and questions asked by Drs. W. D. Kendig, J. L. Rawls, and Isaac Peirce.

Dr. Clarkson withdrew his motion and the recommendation of the Council that we appropriate the amount of $2,500 to secure the appropriation of $10,000 from the Commonwealth Fund for the furtherance of pre-natal and post-natal instruction in this State was seconded and carried.

Dr. Sutton said the committee would welcome any suggestions aud that he would like for anyone interested to atteud a special meeting of the committee on pre-natal and post-natal instruction, suggested by the Council to be held the next morning at 10:00 o'clock.

The resolution, presented by Dr. R. W. Miller, from the Council, to transfer the medical defense fund to the Society's general fund was seconded and unanimously carried. The budget was adopted as approved by the Council.

The next order of business was the selection of a nominating committee, one man from each district. They were selected as follows:

First District—Dr. R. D. Bates.
Second District—Dr. W. B. Martin.
Third District—Dr. St. J. Oppenhimer.
Fourth District—Dr. W. W. Wilkinson.
Fifth District—Dr. P. W. Miles.
Sixth District—Dr. T. A. Kirk.
Seventh District—Dr. W. E. Brown.
Eighth District—Dr. J. A. Gibson.
Ninth District—Dr. T. K. McKee.
Tenth District—Dr. G. A. Torrence.

This committee was asked to make its report at the next meeting.

There being no further business, the House adjourned to meet on Wednesday, October 7th, at 2:00 P. M.

October 7, 1931

The House of Delegates convened on Wednesday at 2:00 P. M., with Dr. I. C. Harrison, President-Elect, presiding. A quorum being present, it was asked that delegates from the odd numbered districts get together and elect Councilors for their districts in accordance with the By-Laws.

Dr. Hodges then took the chair and asked for new business while waiting for these delegates to return to the room.

Dr. Isaac Peirce presented the followiug resolution:

WHEREAS, There is no profession more deeply interested in the temperance and high moral standing of its own members, or in the temperance of the people as a whole, than the medical profession, nor has any other profession been so effected by the so-called Prohibition Amendment; therefore, this resolution is presented to the Medical Society of Virginia calling for an expression by its members of their opinions on the repeal of the Eighteenth Amendment to the Constitution of the United States. Now, therefore, be it

RESOLVED: 1. That this Society favors the submission of this question to its members;

2. That the Secretary be and hereby is instructed to mail to each member of the Society before December 1, 1931, a ballot printed under this resolution, marked:

FOR or AGAINST } the Repeal of the Eighteenth Amendment.

to be marked and also signed by such member, for the purpose of evidencing his membership in the Society, together with a stamped envelope addressed to the Secretary of the Society to be mailed not later than December 1, 1931.

3. That the Secretary of the Society forthwith tabulate the vote and forward the result thereof to the President of the Society and give the same to the press.

Dr. W. B. Martin moved that this resolution be adopted. Seconded. Dr. A. L. Tynes moved that the resolution be tabled on the ground that it is a political question. This was seconded but lost. Dr. Cockrell stated that the resolution would probably cause friction, but this was overruled and Dr. Martin's motion was carried.

Reports from Special Committees were now received.

Report of Walter Reed Commission

TO THE PRESIDENT AND HOUSE OF DELEGATES OF THE MEDICAL SOCIETY OF VIRGINIA:

The Walter Reed Commission has visited the Home several times this summer, and had some improvements made to the grounds. We had the yard plowed and grass seed planted. The Woman's Club of Gloucester has planted some evergreens, which add greatly to the appearance of the yard. We have tried to improve it, thinking there would probably be a large number of visitors to the home during the coming centennial. As soon as we have the

funds available we want to put an iron fence around the lawn.

We now have about $16.00 in the treasury, and $25.00 in outstanding bills. The registration book which is kept in the house shows a large number of visitors from practically every State in the Union.

Respectfully submitted,
E. C. S. Taliaferro, *Chairman.*

This was ordered received and filed.

Report of Maternal Welfare Committee

Gentlemen:

The Maternal Welfare Committee of the Medical Society of Virginia was called to order March 15, 1931, at four o'clock.

Those present were Dr. P. W. Miles, Danville; Dr. Ruth Mason, Petersburg; Dr. F. Bayard Carter, University of Virginia; Dr. J. Allison Hodges, Richmond; Dr. Greer Baughman, Richmond, and by request, Dr. B. B. Bagby, Richmond. Dr. C. B. Bowyer, Stonega, was not able to attend.

Dr. Greer Baughman was elected chairman and Dr. F. B. Carter was elected secretary for the ensuing year.

Report of the progress of the work of the committee from its formation was made by the chairman.

A resolution was passed endorsing the work of the Joint Committee of the University, the Medical Society of Virginia and the Medical College of Virginia on Pre-natal and Post-natal Care.

Dr. J. Allison Hodges, Dr. F. Bayard Carter and Dr. Greer Baughman were appointed a committee to cooperate with the Joint Committee in collecting funds for the establishment of a travelling instructor in pre-natal and post-natal care.

The various members of this committee in cooperation with members of the Joint Committee, have made various contacts throughout the year with the idea of raising money, but have thus far not met with success.

The chairman assigned the following duties to the members of the committee:

Dr. F. B. Carter—Education of the Public.

Dr. Ruth Mason—Health Nurse and Contact with the Health Department.

Dr. P. W. Miles—Midwives.

Dr. C. B. Bowyer—County Medical Societies.

Dr. G. Baughman—Education of the Doctors.

Respectfully,
Greer Baughman, *Chairman,*
Ruth Mason,
P. W. Miles,
C. B. Bowyer,
F. B. Carter.

This was ordered received and filed.

Report of Library Committee

To the House of Delegates of the Medical Society of Virginia:

Gentlemen:

As chairman of the Library Committee of the Medical Society of Virginia, I am happy to report that recent developments in Richmond give assurance that the need of our Society for permanent headquarters and adequate library facilities will be fully met within the next twelve months.

Tho contracts for the Home of the Richmond Academy of Medicine and for the Library of the Medical College of Virginia have been awarded and the buildings will probably be completed by next summer, at a cost of approximately two hundred thousand dollars.

The Home for the Academy will provide an auditorium, committee room, banquet hall, reading room, quarters for the Miller Museum Library and space for several offices.

The College Library will possess every modern facility for handling books, and the large collection of current literature already accumulated by the College will be augmented and cared for by trained workers.

It is believed that the Medical Society of Virginia can effect an arrangement by which the headquarters and offices of the Society will be located in the Home of the Richmond Academy of Medicine, and by which the members of the Society will receive all the privileges of the Library of the Medical College of Virginia.

In 1927 the Executive Council of the Medical Society of Virginia appointed a committee consisting of the President, Secretary, and Chairman of the Executive Council to confer with the building committee of the Richmond Academy of Medicine, with power to arrange space in the proposed new building for offices of the Secretary of the Medical Society of Virginia, at a rental not to exceed $600.00 a year. I therefore recommend that the House of Delegates approve this action of the Executive Council.

Stuart McGuire, *Chairman.*

Dr. P. St. L. Moncure made a motion that this be referred to the Council for action. Seconded and carried.

Report of Committee on History of Medicine in Virginia

During this period the second volume, "Medicine in Virginia in the Eighteenth Century," has been written and is now on the press with a promise of being out by December 1, 1931. It was necessary to make a change of publishers. The William Byrd Press, publishers of the first volume, having sold very few volumes to members of the Medical Society of Virginia, were unwilling to publish the second volume on the generous terms under which they published the first. We were fortunate, however, in securing the services of the Garrett-Massie Publishing Company, who are publishing the second volume on a royalty basis. It is hoped that the Society will support more generously both of these publishing companies in the future and so assure the financial success of our undertaking. In order to prosecute the work on the next volume it is necessary for the committee to have an appropriation of at least $600.00 for the coming year.

Wyndham B. Blanton, *Chairman.*

It was moved, seconded and carried that this report be received and filed.

Report of Child Welfare Committee

To the House of Delegates, Medical Society of Virginia:

Gentlemen:

The Child Welfare Committee wishes to make the following report to you concerning its activities during the past year:

Our committee has not had any special meeting during the past year, but we have cooperated with the Bureau of Child Health in various ways. There have been several conferences between the Director of the Bureau of Child Health and the individual members of the Child Welfare Committee. In these

conferences, we did not consider any change of policy or institution of a new program, but rather to develop the program it now has.

The Bureau of Child Health has submitted to us every pamphlet that they have published, for correction and approval before being published. Our committee has been much interested in these pamphlets.

Individually, we have endeavored to make effective the Beginners' Program. We have appeared on several programs of local societies together with the Director of the Bureau of Child Health with the purpose of increasing the interest of the family physician in this important work. This program shows a slow but steady increase in the number of children examined by the family physician before entering school.

Dr. Warren F. Draper, State Health Commissioner, appointed the chairman of the committee one of eight to advise with him in regard to subject matter, plan of program and personnel of the several committees of his section on Health and Medical Service in the state-wide conference of Childhood and Youth, which was called by the Governor to be held in November of this year. Our first meeting has been held, proper appointments made, and plans of this conference are now under way.

Our committee was ably represented by Dr. A. T. Finch, at the meeting of the Virginia Public Health Association held last May, in the discussion of Failures of the School Child. He stressed that point for which we are striving so hard, namely, the importance of health examinations and medical supervision of school children by the family physicians.

Dr. B. B. Bagby, Director of the Bureau of Child Health, feels that the committee has been of considerable aid to him and requests that its work be continued.

Respectfully submitted,
W. P. Jackson, *Chairman.*

This was ordered received and filed.

Report of Committee for Regulating the Training of X-Ray and Clinical Laboratory Technicians

To the House of Delegates, Medical Society of Virginia.

Gentlemen:

Your committee on "Regulation of X-Ray and Clinical Laboratory Technicians," wishes to make the following report:

Several meetings have been held during the past year; every roentgenologist and most of the pathologists in the State have been communicated with. We have also sought the advice of many eminent physicians outside of these special fields and have come to the conclusion that legislation of some kind should be enacted in our State, not only to control X-Ray and laboratory technicians, but anesthetists as well, but we believe that a great mistake will be made if such legislation is attempted without very thorough and prolonged investigation, and also that the proposed law should be submitted to every roentgenologist, pathologist and anesthetist in the State and eventually published in the Virginia Medical Monthly with the idea of receiving suggestions for perfecting it as far as possible before it is submitted to the Legislature. We do not think that it is wise to attempt to offer a proposed law to the Legislature this year, but perhaps, if the committee continues its work, it may be in position to do so at the next meeting of the Legislature.

Your committee wishes to make the following recommendations:

1. That the committee be continued under the name of "Anesthetists and Laboratory Technicians."
2. That a physician specializing in anesthesia be put on the committee.
3. That a pathologist be put on the committee to replace Dr. Charles Phillips, who has left the State.

In addition to the above, the committee thinks that it might be wise to refer this entire work to the committee on "Legislation and Public Health," or else to solicit their cooperation since the work of the two committees is of somewhat similar nature.

As a part of this report, your committee wishes to offer an outline (copy filed), as a proposed law which has been perfected as far as possible up to the present time, but we submit this realizing that many changes may be advisable before the final draft is presented to the State Legislature.

Respectfully submitted,
E. L. Kendig,
J. T. McKinney,
Oscar Swineford,
Charles Phillips,
Wright Clarkson, *Chairman.*

It was moved that this report be adopted as read. Dr. Moncure stated that we did not want this matter dropped and wondered if the Legislative Committee would consider it their business to take this over. Dr. Clarkson stated that he had no objection to the committee being continued, but thought it would be better for the Committee on Legislation and Public Health to take it up. It was decided, however, that the committee should be continued.

Report of the Department of Clinical Education

The Department of Clinical Education has now been functioning for two years. The House of Delegates, at the annual meeting in Norfolk last October, voted that the President-Elect should each year be the Chairman of the Department. The other members are—two from the Society at large, one each from the Medical Department of the University of Virginia and the Medical College of Virginia, one from the State Health Department and Mr. Geo. W. Eutsler, Associate Director Extension Department, University of Virginia, as executive secretary.

The Advisory Board is composed of the members of the committee on scientific work and clinics, and the committee on medical education and hospitals. The Advisory Board is supposed to cooperate with the department in their meetings and deliberations, and to have equal privilege in deciding any question that may come before the joint body.

The annual meeting of the Department and Advisory Board was held on December 11th, in the office of Miss Edwards, Secretary-Treasurer of the State Society. In addition to the regular members, there were present Dr. W. T. Sanger, President of the Medical College of Virginia; Dr. J. C. Flippin, Dean of the Medical Department of the University of Virginia; Dr. Greer Baughman, several members of the State Department of Health and our President, Dr. Hodges. There was a free discussion of the proposed program and work of the Department for the ensuing year. Most of the time at this meeting was consumed in discussing a plan presented by Dr. W. T. Sanger for "handling pre-natal and post-natal cases in Virginia." This plan had been worked out with the approval and assistance of Dr. J. C. Flippin. These gentlemen discussed the need for special work in handling these cases, the purpose of the clinics proposed, the type of the clinic, the personnel required and the method of procedure.

Dr. Sanger proposed that a committee of six be appointed to work out plans for inaugurating this work. The motion was voted on and adopted, with the following personnel: Drs. L E. Sutton and Manfred Call, of the Medical College of Virginia; Drs. J. C. Flippin and L. T. Royster, of the University of Virginia, and Drs. J. W. Preston and I. C. Harrison, from the Department of Clinical Education.

"This committee will be charged with working out plans and policies of the Joint Medical Extension Service of the University of Virginia and the Medical College of Virginia, the Medical Society of Virginia cooperating. It is understood that the first and immediate function of this committee would be to complete an organization and formulate definite plans for establishing the pre-natal and post-natal clinics suggested in this memorandum. It is further suggested, that the committee have all of its plans and policies approved, prior to recommending their execution, by the Department of Clinical Education, the University of Virginia, and the Medical College of Virginia. It is assumed, moreover, that the committee mentioned above in working out its plans will wish to use to the full the Department of Clinical Education and the membership of the Medical Society of Virginia in executing any and all projects adopted for service to the State in this work of graduate education."

On January 20th the committee of six met in the office of the Secretary, Miss Edwards. Some definite progress was made at this meeting. Dr. Sutton was elected permanent chairman of the committee of six and was given authority to prepare a budget, to solicit funds and work out plans for carrying on the work, with the assistance and cooperation of other members of the committee It was understood that the committee would meet at the call of the chairman.

Dr. Sutton having asked each member of the committee to submit suggestions, this request was complied with, and I am quoting here those suggestions submitted by Dr. J. W. Preston: "The chief things of importance occurring to me are about as follows:

(a) Securing a fund of a minimum of $10,000.

(b) Eliciting the cooperation of the practitioners of the State by a carefully worded questionnaire to each. By a brief article written by the President-Elect published in the Journal, and an editorial in the Journal.

(c) By encouraging the extending of invitations, by such organization as can be interested, to the members of the Obstetric Staffs of the two colleges to give demonstrations similar to that recently given in Danville, thereby awakening the general practitioners to the broadening field of the work.

(d) To select a capable and suitable whole time man for clinics.

(e) Have it definitely understood that all employees are directly responsible and under the control of Dr. Sutton, Chairman of the Pre-natal and Post-natal Clinics, which department is in turn under the control of the Department of Clinical Education of the Medical Society, of which the President-Elect is Executive in accordance with enactment of the House of Delegates"

While a great deal of work has been done by Dr. Sutton and Dr. Hodges since this meeting, we are not in position to report anything concrete at this time.

And now, you will pardon a few more or less personal remarks. It is with mixed feelings of relief and regret that I approach the end of the year, hoping that the work may go on growing and improving under the leadership of my successor, for whom I bespeak your hearty cooperation and assistance. To those who were kind enough to write articles in the cause of Post-graduate Education, I am sincerely grateful, and am sure their contributions have added much to the interest and value of what has been said. The other members of the Department of Clinical Education and the Advisory Committee have been helpful and sympathetic. The Councilors have shown great interest, in working up clinical meetings in their districts, and with the assistance of Mr. Eutsler, our executive secretary, have really been the leaders in this work.

The members of the faculties of our two State medical schools have cooperated with us at all times, giving us valuable advice and providing clinicians and lecturers for the meetings at various points throughout the State.

The officers of local societies and their members have encouraged us, by arranging meetings and programs in various communities. The attendance at all of the clinical meetings has been good.

Dr. Hodges, our President, has been untiring in his efforts to help and encourage us and has assisted in every possible manner.

Mr. Eutsler, our Executive Secretary, has contributed greatly to the success of the work by his thorough and efficient methods of advertising the meetings, by means of cards and notices.

Our aim and purpose has been, to teach medicine of today to the general practitioner by practical methods and clinics, held in various towns and villages throughout the State. At a number of these meetings we have been fortunate in securing speakers of national reputation. We have endeavored to emphasize the importance of continued education for all physicians, and we feel that considerable progress has been made.

There is good reason to hope, after these first two years' experience, for still more progress and greater interest during the coming year.

We have much to learn and our methods will doubtless be improved, as new hands take hold, and new leaders show the way.

I. C. Harrison, *Chairman.*

It was ordered that this be received and filed.

Committee on Group Societies

The Committee on Group Societies feels that, inasmuch as the State Legislature will this year have to divide the State into nine Congressional Districts instead of ten, the State Medical Society postpone until another year all action in this matter.

Charles R. Grandy, *Chairman.*

Dr. Moncure stated that the Council had appointed a committee to present its recommendation to the House of Delegates for its approval and that the committee offers the resolution that the Committee on Redistricting be continued with a view to recommending districts best suited to the needs of such districts with the consent of the physicians of such sections regardless of the political lines as laid down by the Legislature. Seconded and carried.

Report of the Committee on Public Relations for the State of Virginia

At the meeting of the Medical Society of Virginia, at Norfolk, Va., October, 1930, Dr. Southgate Leigh, one of the delegates to the American Medical Association, reported, in the House of Delegates of the

Medical Society of the State of Virginia, that the American Medical Association urged the appointment of a Public Relations Committee by each state in the United States to combat the encroachment by Federal and State Governments on the rights of the practitioners of medicine in private practice in the United States.

As a result of this recommendation the President of the Virginia Medical Society appointed the following committee:

Chairman, G. Franklin Simpson, Purcellville. Members: Southgate Leigh, Norfolk; J. Bolling Jones, Petersburg; Alex. F. Robertson, Jr., Staunton; Wade C. Payne, Haymarket.

In the offices of the Society at Richmond, January 15, 1931, this committee was convened. Present: Drs. Simpson, Jones and Payne. At this meeting Dr. W. O. Bailey, Leesburg, Va., was added to the committee as its Secretary. (The minutes of this meeting filed.)

At this meeting it was decided:

(a) That necessity for organization against state and federal infringements does exist.

(b) That these infringements must be analyzed and delineated.

(c) That what the results of these infringements have been, are, and, as nearly as may be anticipated, will be, must be shown.

(d) That some plan must be formulated to combat these infringements.

The elements involved in the promulgation of any plan were conceded to be (a) the people, (b) the physicians and (c) the government—both federal and state. From this premise the work was begun and has been continued.

The committee decided that the physicians must first be apprized of what was transpiring. With this in mind a letter was sent to the Councilor for each Congressional District, requesting that he appoint a time and a place when members of the Public Relations Committee might present this important subject. It was the committee's plan, after its presentation, to depend upon the Councilor for its further diffusion. To prepare each medical society in the state for the appeal from each Councilor, a brief letter of explanation was sent to the president of each county and other society. (Copy filed.)

The following Councilors arranged for meetings and they were held:

Dr. R. D. Bates—Meeting at West Point.
Dr. P. St. L. Moncure—Norfolk.
Dr. J. M. Shackelford—Martinsville.
Dr. J. E. Knight—Warrenton.
Dr. C. B. Bowyer—Lebanon.
Dr. J. M. Emmett—Clifton Forge.
Dr. Wright Clarkson—Petersburg.

Communication to Dr. J. R. Gorman, Lynchburg, Va., was lost in the mails. Dr. Percy Harris, Scottsville, tried to arrange a meeting but was unable to do so.

No reply from Dr. Roshier W. Miller, Richmond, to either communication sent him has been received.

On September 5, 1931, realizing that it would be impossible to hold meetings in the districts represented by Drs. Gorman, Harris and Miller, on account of the proximity of the Roanoke meeting, Dr. Simpson instructed the secretary to forward each of them a copy of an analysis of this problem which he had had prepared earlier in the year. In the letter of transmission it was requested that the contents of this analysis be brought before the constituent societies of the respective districts prior to the Roanoke meeting. A copy of this analysis has been sent to all Councilors, Chairmen of Standing Committees, President and President-Elect of the State Society, a few presidents of county medical societies and a few other interested physicians in Virginia. (Copy filed.)

Eleven addresses were given in all by various members of the committee. In one instance speakers travelled over seven hundred miles to present the subject at first hand.

Besides the meetings mentioned above certain special invitations were received and accepted.

(1) To address the Medical Society of Maryland Virginia and the District of Columbia. An extract from the minutes of this society relative to this subject is as follows:

"Dr. Frank Simpson and Dr. William Otis Bailey presented the outstanding paper of the year: 'Medicine Meteoric and Metamorphic.'"

A resolution indorsing the papers of Dr. Simpson and Dr. Bailey was unanimously passed on and a committee appointed to further investigate the question. (Copy filed.)

(2) The Culpeper-Medico-Dental Society.

(3) The Prince Edward County Medical Society, Farmville, Va.

(4) The Fairfax County Medical Society.

Succinctly the committee tried to impress these points:

(1) Certain invasions by the federal government. (Analysis filed.)

(2) That the Department of Health of the State be requested to formulate a definite policy as to what it intends to do. In some counties it vaccinates; in some it permits tonsil clinics, in some, other clinics. The sovereign rights of one county are as inviolable as those of another and should not be invaded unless practicing physicians refuse to cooperate. The burden of proof distinctly rests upon the Department of Health.

(3) The administration of vaccines, and other biological products, of both prophylactic and curative nature, is the province of the physician in private practice.

(4) That no curative medicine or surgery be practiced by the State where it can be done by private practitioners.

(5) That campaigns inaugurated by the Department of Health be referred to county societies for their endorsement and a plan of action be worked out conjointly.

(6) That all employees and representatives of the Department of Health be directed by physicians and not by laymen.

(7) That Public Relations Committees be appointed by the various societies to bring to the attention of the public, through various lay bodies, and to representatives in all legislative bodies, both federal and state, that the practice of medicine is now, and will always be in the hands of the medical profession; they being the only scientifically, technically trained and legalized custodians of the public health.

(8) That the public health of the people is, by its very nature, vested in both the Department of Health and the family physician. Their functions are coordinate and cannot be divorced. That they can and will go amicably hand-in-hand is the earnest hope and sincere belief of this committee.

(9) That no midwife be given a permit unless endorsed by the local physicians in the community in which she proposes to work.

The committee has left the following to be done by its successor:

(1) Presentation of this subject to the Districts of which Drs. Miller, Gorman and Harris are representatives.

(2) Decision as to how this subject shall be presented to the people.

(3) Decision as to whether, how, and when, this subject shall be presented to legislators both state and federal.

(4) Action on certain recommendations made by the Loudoun County Medical Society. It was impossible to take up these recommendations with the other business on hand although their importance is fully recognized and the Society should be commended for presenting them. (See page 618 of the VIRGINIA MEDICAL MONTHLY for December, 1930.)

(5) Certain recommendations of the Fauquier Medical Society, dated August 11, 1931. Time did not suffice to investigate these subjects. (Copy filed.)

In conclusion the committee cannot refrain from expressing to the President of the Medical Society of the State of Virginia, Dr. J. Allison Hodges, its deep and sincere thanks. He has been a wise, gentle, forceful and intelligent counselor. It is also deeply grateful for the reception which it has been accorded by the physicians throughout the whole State. It is a difficult matter to present subjects of a non-professional nature to medical societies. The committee hopes that it has been successful. It has done its best.

G. FRANKLIN SIMPSON, M. D.,
Chairman.

Dr. W. W. Wilkinson moved that the report be accepted and the committee continued. Dr. H. L. Myers moved that the American Legion be thanked for its recent action in this matter. Both motions were carried.

Dr. Simpson, Chairman, said that he wished to take this opportunity publicly to thank Dr. W. O. Bailey for the service he had rendered this committee as its secretary. Dr. Hodges said he not only wished to thank Dr. Bailey for his very efficient work, but also the chairman for his interest and enthusiasm and the other members of the committee.

Report of the Committee on Military Affairs and National Defense

MR. PRESIDENT AND MEMBERS OF THE HOUSE OF DELEGATES:

Three matters of importance have been considered by this committee during the past year which are of vital interest to the Medical Society of Virginia and the medical profession of this State.

The first of these is a change in Army Regulations governing the reappointment and reassignment of officers of the Medical Corps Reserve of the Army.

The second is a recommendation to appoint a State Surgeon on the State Staff of the Virginia National Guard.

The third is a resolution endorsing the published intention of the U. S. Veterans Bureau to locate and build a hospital in Virginia for the treatment of ex-service men and women of this State, and to request prompt action in the construction and operation of such a hospital.

RESOLUTION SUGGESTING A CHANGE IN REGULATIONS FOR THE RECOMMISSION AND REASSIGNMENT OF OFFICERS IN THE ORGANIZED RESERVE OF THE U. S. ARMY

WHEREAS, The present Army regulations require that every medical reserve officer shall, during each five years' commission period, put in two hundred hours of military work, in camp, correspondence school, inactive training meetings, or similar military activity, or else become ineligible for renewal of his commission with assignment to an Organized Reserve Unit, and therefore revert to the "Auxiliary Reserve" in time of peace; and

WHEREAS, There are many highly trained, highly skilled, and very active physicians who, as reserve officers, have been assigned as chiefs and other distinctly professional services, and in positions requiring special technical skill such as is usually possessed by specialists, carrying very little administrative responsibility, and whose professional duties in busy private lives make them especially well fitted for their duties in their army assignments, but whose same duties make it practically impossible for them to carry on military work in time of peace; and

WHEREAS, Many of these men and their valuable attainments are being lost to the Organized Reserve, although they are willing and anxious to serve their country in time of need and do not aspire to advancement in grade. Therefore, be it

RESOLVED, That the Medical Society of Virginia, desiring that the medical profession may be of the greatest service to our country, respectfully suggest that the best interests of the military service might be enhanced if the regulations regarding the Organized Reserve were changed to provide for the recommission and reassignment of officers holding assignments such as those mentioned in the second paragraph, even though they may not have completed the required amount of military work, and hereby recommend consideration of such change; and further be it

RESOLVED, That a copy of this resolution be sent to the Corps Area Surgeon, and the Commanding General of the 3rd Corps Area, and the Surgeon General of the Army, the officer in charge of Organized Reserves, Third Corps Area, the Adjutant General of the Army, the Chief of Staff of the Army, and the secretary of each State medical association.

(Signed):
W. A. BRUMFIELD, M. D., *Chairman,*
G. A. L. KOLMER, M. D.
NELSON MERCER, M. D.,
Committee.

RESOLUTION RECOMMENDING A STATE SURGEON OF THE VIRGINIA NATIONAL GUARD

WHEREAS, 1. It is believed that the appointment of a State Surgeon of the Virginia National Guard is needed to coordinate and supervise the various units of the Medical Department of the Guard in Virginia; and

WHEREAS, 2. The absence of a State Surgeon for several years past has enabled this vacancy to be filled by an officer of another branch of the service; and

WHEREAS, 3. A State Surgeon is needed to perform the various duties of this office in the field, by serving as the medical member of Examining Boards for National Guard personnel, and for consultation in matters which require medico-military advice; and

WHEREAS, 4. The prestige and morale of the medical profession in Virginia, as represented by its members who are Medical Officers in the Guard, would be benefited by having a representative of their profession on the State Staff with the appropriate rank and title of State Surgeon. Therefore, be it

RESOLVED, 1. That the Medical Society of Virginia, desiring that its members may be of the greatest

service to our State and nation, respectfully suggest and urge that the best interests of the Virginia National Guard and the medical profession would be greatly enhanced by the appointment of a State Surgeon; and

RESOLVED, FURTHER, 2. That the appointment of a State Surgeon with the rank of Lieutenant-Colonel be made immediately from among the Medical Officers of the Guard or the Medical Corps Reserve of the Army who have served at least ten (10) years and have attained the rank of Major or Lieutenant-Colonel in either or both; and

RESOLVED, FURTHER, 3. That a copy of this resolution be sent to His Excellency, the Governor of Virginia, the Adjutant General, Virginia National Guard, the Chief of the Militia Bureau, the Officer in Charge of National Guard Affairs, 3rd Corps Area, and the Corps Area Surgeon, 3rd Corps Area, U. S. Army.

(Signed):
W. A. BRUMFIELD, M. D., *Chairman*,
G. A. L. KOLMER, M. D,
NELSON MERCER, M. D.
Committee.

RESOLUTION ENDORSING THE DECISION OF THE U. S. VETERANS BUREAU TO LOCATE A HOSPITAL IN VIRGINIA

WHEREAS, The U. S. Veterans Bureau has announced its intention to locate a hospital for the treatment of ex-service men and women in Virginia. Therefore, be it

RESOLVED, 1. That the Medical Society of Virginia cordially endorses this action of the Veterans Bureau and respectfully requests that a hospital for this purpose be constructed and ex-service patients admitted to it at the earliest possible moment; and

2. That a copy of this resolution be sent to the Director of the U. S. Veterans Bureau, the two U. S. Senators and all the members of Congress from Virginia and His Excellency, the Governor of Virginia.

(Signed):
W. A. BRUMFIELD, M. D., *Chairman*,
G. A. L. KOLMER, M. D,
NELSON MERCER, M. D.
Committee.

The three resolutions were considered separately and each was adopted.

The Report of the Committee on Tuberculosis Clinics

MR. PRESIDENT AND MEMBERS OF THE HOUSE OF DELEGATES:

At the meeting in Norfolk last year, our State Health Commissioner, the late Dr. Ennion G. Williams, requested that a committee be appointed by this Society, to be known as the Tuberculosis Committee, the duties of which were to look into the work being done in the clinics throughout the State by the State Board of Health. A committee of five was authorized, the personnel to be appointed by the president, who named the following: Dr. C. L. Harrell, Norfolk; Dr. W. P. Gilmer, Clifton Forge; Dr. G. H. Steuart, Ottoman; Dr. W. W. Wilkinson, La Crosse; and Dr. R. L. Page, Batesville.

A meeting was called and held in Dr. Williams' office in Richmond on January 19, 1931. In attendance were, Dr. J. Allison Hodges, Dr. Roy K. Flannagan, Dr. W. P. Gilmer, Dr. R. L. Page and Dr. C. L. Harrell. Owing to illness, Dr. Williams was unable to be present. In his absence, Dr. Flannagan presided and presented a carefully prepared and very complete report, describing in detail the entire tuberculosis programme, as it is being carried on throughout the State. This report, consisting of seventeen typewritten pages, was read section by section and discussed. It was brought out in this report that these diagnostic or case finding clinics were held only in counties or communities where requested, that the larger cities as Richmond, Norfolk, Portsmouth, Petersburg, Lynchburg, Roanoke, Charlottesville and Newport News were not touched, this work being left to the local workers. No treatments are given in these clinics, only instructions and the case referred to the family physician.

These clinics consist of large corps of workers, in addition to the office force, there is a field supervisor, two full time clinicians, and two part time clinicians, one X-ray unit, with a technician in charge, ten field nurses, one full time clerk and one part time clerk. One can easily see with this number of workers, well organized, a tremendous amount of work can be done; even then several counties have not been reached.

At the request of the chairman, a copy of this report was mailed to each member of the committee, also a copy of the instructions given to field workers, which consisted of twenty-three typewritten pages. They were requested to study this report and make any suggestions or comments they thought advisable. Thus far, only favorable comments have been received.

Your chairman a few years ago helped to conduct several of these clinics, before full time physicians were employed. Even then I thought they were doing a wonderful work. Since then the work has been better systematized, conducted by full time, trained clinicians and nurses, so the work has increased both in quantity and quality. We know that one of the most important steps in eradicating tuberculosis is to find the open cases as soon as possible, put them in a sanatorium and prevent further infection. Many cases are found in the rural districts by these clinics, that would never be found. There still exists one very weak point. The State has not enough beds to take care of the far advanced cases.

There are two suggestions this committee wishes to offer. First, when a case is found and there is some doubt as to the kind of pulmonary infection you are dealing with, whether child or adult, rather than send them to a sanatorium for observation, send them to some hospital or person near-by interested in this field of work, for study. The stigma placed on a person that has been in a tuberculous sanatorium is not easily removed.

The second, and most important thing, we think the state health department through its field workers, should try to cultivate a better and closer cooperation with the local physician in the communities, where they are working. All the physicians in the community should be invited to attend the clinic by the clinician in charge (not the nurses) and given a chance to help. We further suggest that one man in each community that shows some interest in chest work should be engaged by the state department of health, to assist the physician in charge and paid for his work, that the clinician instruct them in the fine points in diagnosis. By this means we believe you will create a better feeling among the profession throughout the State, at the same time you will be training men to carry on the work during the clinic's absence.

We further recommend that this committee be continued, the personnel to be appointed by the President.

C. L. Harrell, *Chairman*,
W. W. Wilkinson,
Geo. H. Steuart,
Wm. P. Gilmer,
R. L. Page.

It was moved that this report be accepted. Seconded and carried.

Report of Committee on Mental Hygiene

Mr. President and Members of the House of Delegates:

At the 1930 meeting of the Society your President appointed a committee on Mental Hygiene, the personnel consisting of Dr. J. H. Royster, Dr. A. M. Showalter and Dr. Frank H. Redwood. The committee has had several meetings, two members being present as Dr. Showalter was unable to attend.

The committee wishes to submit the following report:

1. That the Society strongly endorse the work and the educational program of the State Bureau of Mental Hygiene.
2. That the Society sponsor, through the component societies, an expansion of the work of the Bureau of Mental Hygiene, by lending aid in every way possible to furthering the establishment of clinics such as have been successfully conducted in several cities of the State.
3. The committee feels that further educational features of the Mental Hygiene movement should be accomplished first through the profession and second through the laity.
4. The relationship between criminality and psychiatry is becoming more and more important and the present methods of expert testimony are far from satisfactory. Your committee feels very strongly that the Society should advise such legislation to make it possible to have all criminals examined by a duly appointed and competent board before coming to trial. Legislation similar to the Massachusetts Law would be advisable.
5. We recommend that a committee be appointed by the President to continue the study of Mental Hygiene in accordance with the resolution passed by the 1930 session of the Society.

Respectfully submitted,
J. H. Royster, M. D.,
A. M. Showalter, M. D.,
Frank H. Redwood, M. D., *Chairman*.

It was moved, seconded and carried that this be received and filed.

Report of Committee for Administering of Trust Fund for Post-Graduate Clinical Education

It was stated that on account of the depression, this committee had thought it advisable to defer its work.

Advisory Board to the Woman's Auxiliary

Dr. Leigh stated that he would give a concise report at the night meeting, but said the Woman's Auxiliary is doing a great work for the medical profession all over the country. They have a membership of 13,000 and this is increasing all the time. Their work is especially helpful in telling the true story of medicine to the public. He stated we have no idea how much they are doing in letting the public know what medicine is and that his object in speaking was to let us know that at this time when the medical profession needs all the help it can get, we ought to help the Woman's Auxiliary, for they can be a tremendous power for good.

Dr. Hodges then appointed Drs. W. D. Kendig, W. C. Henderson and Hugh Warren as a committee of tellers. The following Councilors were nominated from the odd numbered districts for a term of two years:

1st District—Dr. R. D. Bates, Newtown.
3rd District—Dr. R. W. Miller, Richmond.
5th District—Dr. J. M. Shackelford, Martinsville.
7th District—Dr. Percy Harris, Scottsville.
9th District—Dr. C. B. Bowyer, Stonega.

The report of the nominating committee was then presented as follows:

Dr. I. C. Harrison, Danville, automatically succeeded to the Presidency.

President-Elect—Dr. J. C. Flippin, University.

Vice-Presidents—Dr. G. F. Simpson, Purcellville; Dr. F. H. Smith, Abingdon, and Dr. Warren T. Vaughan, Richmond.

Executive Secretary-Treasurer—Miss Agnes V. Edwards, Richmond.

Dr. Southgate Leigh, Norfolk, was elected as a delegate to the American Medical Association for a term of two years, Drs. J. W. Preston, Roanoke, and E. C. S. Taliaferro, Norfolk, holding over for another year. Dr. Charles R. Grandy, Norfolk, was elected for a term of two years as alternate-delegate, and Dr. W. F. Draper, Richmond, for one year, to fill the unexpired term of Dr. Ennion G. Williams, Dr. J. E. Marable, Newport News, holding over for another year.

Dr. Moncure moved that the nominations be closed and that the president cast the vote for the ticket as presented by the Nominating Committee. Seconded and carried.

It was decided that the date and place of the next meeting should be named by the Council at its mid-winter meeting, no invitations being received.

Under new business, Dr. Isaac Peirce, a member of the Membership Committee, presented the following resolutions:

It is recommended by the Committee on Membership, that during the next year the Secretary have published a complete list of the members of this Society, either through the Monthly or in a separate handbook, for distribution to its members.

We also advise that membership in the Society be attained in the regular way, through the component societies, as provided by the Constitution rather than by recommendation to the Committee on Membership.

It was moved and carried that the matter of publishing a list of the members of the Society be left to the Council as it entailed an expense in addition to the provisions in the budget. It was stated that the matter of securing membership through the component societies was taken care of by the Constitution and By-Laws.

Dr. A. M Showalter, Secretary of the Southwestern Virginia Medical Society, presented the following resolution, which had been approved by that

Society and referred to the House of Delegates of the State Society:

WHEREAS, It seems that it is the intention of the law of the State of Virginia to vest the Medical Examining Board with the duty and responsibility of licensing physicians to practice within the State, and equally to confer upon it the duty of revoking or suspending the said license for cause, and yet we are advised that the present wording of the Medical Practice Act restricts the action of the Board to the effect that, in case of revocation or suspension of a license, the party affected has the right of appeal to the court, that the case must there be tried *de novo*, and the Board required to prove by witnesses every material fact upon which action is based, and finally that the court may require the license to be restored contrary to the judgment of the Board. Therefore, be it

RESOLVED, That the Southwestern Virginia Medical Society, in session at Marion, Va., September 24 and 25, 1931, desires to put itself on record as favoring an amendment of the Medical Practice Act and of the court, to the end that it be clearly stated that the Medical Examining Board is the trial court, and has the right to revoke or suspend the license. In case of appeal the appeal is on the record only on a question of law. and not on the facts, and shall be heard by the court, without the intervention of a jury. To make this amendment effective, the act should provide the right of the Board to summon witnesses, to administer the oath, to meet the expense of legal advice and stenographic services.

It was moved and seconded that this be approved and left to the Committee on Legislation and Public Health. Dr. Moncure said there was at one time an appropriation made by the Society to assist the State Examining Board in the furtherance of this work, and that the local societies had also contributed to the work of prosecuting illegal practitioners. Dr. Showalter was under the impression that any expenses would be paid by the State. Dr. Peirce stated that the Clinch Valley Medical Society voted against this resolution as they did not think anyone should be deprived of the right of appeal in the circuit court. Motion that this be approved and left to the Committee on Legislation and Public Health was carried.

Dr. N. G. Wilson stated that for the past five years in his section of the State there had been a noted increase in thyrotoxicosis as a result of the use of iodized salt, and presented the following resolution:

That the president of the Medical Society of Virginia shall appoint a committee composed of three members of the Society whose duty it shall be to make inquiry of all available sources regarding the effect of and results from a general use of iodized salt and report to this body at its next meeting. This was seconded and carried.

Dr. W. B. McIlwaine presented the following resolution which had been unanimously endorsed by the Virginia Pediatric Society:

The Virginia Pediatric Society respectfully requests the House of Delegates of the Medical Society of Virginia to recommend the appointment of a Pediatrician on the State Board of Medical Examiners as soon as it is practicable to do so.

Dr. McIlwaine in a few words explained the reason for this action on account of the interest aroused by President Hoover's White House Conference on Child Health, and Governor Pollard's Conference on Childhood and Youth to be held November 24, 1931.

Upon motion, the report was received and referred to the Committee on Legislation and Public Health.

Dr. W. W. Wilkinson moved that two country physicians be added to the joint committee on pre-natal and post-natal instruction and that the President appoint them. This was seconded and carried.

The resolution with regard to securing a vote from the doctors about the 18th Amendment, presented by Dr. Isaac Peirce, was again brought up for discussion as it was stated it would cost from $85 to $100 to carry out the resolution, and this amount could not be cared for in the budget as passed. Dr. Clarkson made a motion that we reconsider this resolution. It was stated that such a motion would have to be presented by some member who voted in the affirmative. Dr. Harrison said that the budget had been gone over in the Council and expenditures had been discussed and trimmed down as far as seemed possible, and he thought that the resolution should have been ruled out of order when it came up as the budget had already been adopted. Dr. H. L. Myers stated that he thought we should know how the Society stands on this question and if the resolution was thrown out, it would cause considerable trouble. Dr. J. L. Rawls stated that according to Dr. Harrison there was no way for the House of Delegates to appropriate any additional money after the budget had been made. Dr. Hodges said the House of Delegates was the law-making body of the Society, but the Council was the financial body. He hardly thought the income of the year was going to be as much as it was estimated when the budget was made up. Dr. Clarkson then suggested that a special meeting of the Council be called to decide this question. Dr. Harrison moved that Miss Edwards be instructed by this body not to send out these notices until this matter had been passed on by the Council at its winter meeting. There was no second and Dr. Clarkson said he thought we would be subject to severe criticism should we not carry out the resolution. Dr. Moncure asked if it would be carrying out the resolution by deferring it or should it be attended to as soon as we got the money. Dr. Hodges thought the date in the resolution was an immaterial matter, as it was the result that was wanted and said he would take the responsibility of not sending out the questionnaire for the present, but as soon as the money was available, would do so. One member stated it would not look right for this to be passed and then not carried out. Dr. A. L. Tynes said that the discussion was out of order, there being no quorum present at this time. It was then moved by Dr. R. A. Moore that a meeting of the House of Delegates be called immediately after Dr. Draper's paper at the night session to consider action upon this resolution.

The House adjourned until that hour.

Called Meeting of House of Delegates

There was a called meeting of the House of Delegates on Wednesday evening, October 7th, at 10:00 o'clock, to consider action upon the resolution presented by Dr. Isaac Peirce with regard to sending questionnaires to the members of the Society to secure their opinions with regard to the 18th Amendment.

A quorum being present the meeting was called to order by the President, Dr. J. Allison Hodges.

Dr. N. G. Wilson made a motion that the secretary be instructed to write a letter of thanks to the Roanoke doctors, expressing appreciation of the Society for the lovely entertainment provided for our meeting. Seconded and carried.

It was then stated that this meeting was called for the purpose of determining how the money should be raised to carry out Dr. Peirce's resolution. (See page 619.) Dr. J. L. Rawls asked if $100 would cover the expense of this work, and if so, stated that he would guarantee that this money would be in the hands of the secretary in time to get the letter out in accordance with the resolution. Miss Edwards stated that several doctors had advised her also that they would assist in raising part of the money for carrying out this resolution.

Dr. F. D. Wilson asked why the Society could not afford this money, and offered a motion that the Council be ordered to reimburse the men who donated the money as the Society should pay the price in passing a resolution of this kind. Dr. Clarkson stated that he thought we should pay the money back. Dr. Harrison explained that the budget had been completed for the coming year. Dr. Rawls said there was no need to reimburse the donors because if they want statistics they have a right to pay for them. Dr. Wilson's motion was lost.

Dr. Hodges then presented his successor, Dr. Harrison, who made a few remarks of appreciation and asked the cooperation of members during his term of service.

There being no further business, the meeting adjourned.

AGNES V. EDWARDS,
Executive Secretary.

List of Members of Standing and Special Committees of the Society as Announced by Dr. I. C. Harrison, President

NOTE: Figures after names in Standing Committees indicate the length of term of office. Each year one new member is named on each Standing Committee for a term of three years.

Standing Committees

SCIENTIFIC WORK AND CLINICS: *Chairman*, Dr. C. Bruce Morton (2); Dr. J. S. Horsley, Jr. (3); Dr. J. B. Nicholls (1).

LEGISLATION AND PUBLIC HEALTH: *Chairman*, Dr. Wright Clarkson (3); Dr. B. B. Bagby, acting for Dr. A. L. Gray (1); Dr. John W. Robertson (2).

PUBLICATION AND PROGRAM: *Chairman*, Dr. Alexander G. Brown, Jr. (3); Dr. John H. Neff (1); Dr. R. L. Payne (2).

MEDICAL ECONOMICS: *Chairman*, Dr. John O. Boyd (3); Dr. Malcolm H. Harris (1); Dr. Ernest G. Scott (2).

MEDICAL EDUCATION AND HOSPITALS: *Chairman*, Dr. J. W. Preston (3); Dr. P. St. L. Moncure (1); Dr. W. O. Bailey (2).

MEMBERSHIP: *Chairman*, Dr. J. A. White (3); Dr. Isaac Peirce (1); Dr. A. W. Hammond (2).

ETHICS AND JUDICIARY: *Chairman*, Dr. St. Geo. T. Grinnan (3); Dr. J. Coleman Motley (1); Dr. Joel Crawford (2).

Special Committees

WALTER REED COMMISSION: *Chairman*, Dr. E. C. S. Taliaferro, Dr. C. P. Jones, Dr. H. S. Hedges, Dr. P. W. Boyd, Dr. J. D. Clements.

MATERNAL WELFARE: *Chairman*, Dr. Greer Baughman, Dr. P. W. Miles, Dr. W. R. Payne, Dr. F. O. Plunkett.

LIBRARY: *Chairman*, Dr. Stuart McGuire, Dr. R. M. Wiley, Dr. G. H. Carter.

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TO MAKE INQUIRY AS TO EFFECT OF USING IODIZED SALT: *Chairman*, Dr. William M. Higgan, Dr. N. G. Wilson, Dr. A. M. Showalter.

TO ADMINISTER TRUST FUND FOR POST-GRADUATE CLINICAL EDUCATION: Dr. J. Shelton Horsley, Dr. J. W. Preston, Dr. J. Bolling Jones, Dr. Charles R. Grandy, Dr. J. Allison Hodges.

Truth About Medicine

In addition to the article enumerated in our letter of September 25th the following have been accepted:

Lederle Laboratories, Inc.
- Diphtheria Toxin-Antitoxin Mixture (0.1 L+) 3 syringe packages.
- Pollen Antigens—Lederle, Series D Packages.
- Prostrate Pigweed Pollen Antigen—Lederle.
- Summer Cypress Pollen Antigen—Lederle.
- Thromboplastin Local—Lederle.

H. K. Mulford Co.
- Tuberculin Intracutaneous (Human Type) 3 c.c. vial packages.
- Tuberculin Intracutaneous (Bovine Type) 3 c.c. vial packages.

Parke, Davis & Co.
- Glaseptic Ampoules Solution Glucose, 50 per cent, 100 c.c.
- Scarlet Fever Streptococcus Toxin for Preventive Immunization—P. D. & Co., six 1 c.c. vial packages.
- Typhoid-Paratyphoid Vaccine (Prophylactic) ten 2½ c.c. vial packages.
- Typhoid Vaccine (Prophylactic) ten 2½ c.c. vial packages.

E. R. Squibb & Sons
Neocinchophen—Squibb.
Tablets Neocinchophen—Squibb, 5 grains.
Frederick Stearns & Co.
Synephrin Tartrate—Stearns.
Synephrin Tartrate Solution, 3 per cent.
Synephrin Tartrate Solution, 5 per cent.
Synephrin Tartrate Emulsion Plain.
Synephrin Tartrate Emulsion Compound.

The following articles have been exempted and included with the List of Exempted Medicinal Articles (New and Non-official Remedies, 1931, p. 477):

Arzol Chemical Co.
Silver Nitrate Applicators (Silver Nitrate 75 per cent).
E. R. Squibb & Sons.
Cinchophen—Squibb.

NEW AND NONOFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Squibb Liquid Petrolatum with Agar and Phenolphthalein.—Liquid petrolatum—Squibb, heavy (California), 50 c.c.; agar, 1.5 Gm.; phenolphthalein, 0.095 Gm. (1½ grains per fluidounce); sodium benzoate, 0.1 Gm.; acacia, glycerin and water sufficient to make 100 c.c. E. R. Squibb & Sons, New York.

Solution Liver Extract Parenteral—Lederle.—A sterile aqueous solution of a concentrated water soluble, nitrogenous, nonprotein fraction obtained from fresh mammalian liver. It is marketed in ampules, each containing the material obtained from 100 Gm. of liver. Solution liver extract parenteral-Lederle is proposed for intramuscular or intravenous injection in the treatment of pernicious anemia. Lederle Laboratories, Inc., Pearl River, N. Y. (Jour. A. M. A., October 3, 1931, p. 1077.)

Sandoptal.—Isobutylallyl barbituric acid. Sandoptal differs from barbital (diethylbarbituric acid) in that both of the ethyl groups of the latter are replaced, one by an iso-butyl group and the other by an allyl group. The actions and uses of sandoptal are the same as those of barbital and its therapeutically useful derivatives. It is also supplied in the form of tablets sandoptal, 0.2 Gm. Sandoz Chemical Works, Inc., New York.

Diphtheria Toxin for the Schick Test, Ready to use without Dilution—Squibb.—A diphtheria toxin (New and Nonofficial Remedies, 1931, p. 383) obtained by growing diphtheria bacilli in broth, aging, and diluting with peptone solution. It is marketed in packages of 1 c.c. containing sufficient for ten tests and in packages of 10 c.c. containing sufficient for 100 tests. E. R. Squibb & Sons, New York. (Jour. A. M. A., October 17, 1931, p. 1149.)

FOODS

Mead's Dextri-Maltose No. 1 with Sodium Chloride 2 per cent (Mead Johnson and Company, Evansville, Ind.).—Essentially a mixture of maltose and dextrins with 2 per cent added sodium chloride. Mead's Dextri-Maltose No. 1 with Sodium Chloride 2 per cent is recommended for use as a carbohydrate supplement in the general diet of infants and is especially adapted to meet the carbohydrate requirements of infants and invalids. It is used in milk modifications suitable for children or adult invalids.

Mead's Dextri-Maltose No. 2 (Mead Johnson and Company, Evansville, Ind.).—Essentially a mixture of maltose and dextrins. This product is claimed to be especially prepared for use as a carbohydrate supplement in general infant feeding and as a valuable ingredient in the diet of adult invalids; it is used where the addition of salt is not required.

Mead's Dextri-Maltose No. 3 with Potassium Bicarbonate 3 per cent (Mead Johnson and Company, Evansville, Ind.).—Essentially a mixture of maltose and dextrins with 3 per cent added potassium bicarbonate. Mead's Dextri-Maltose No. 3 with Potassium Bicarbonate 3 per cent is recommended for use as a carbohydrate supplement in special infant diets and other special diet mixtures for meeting carbohydrate requirements. It is used in milk modifications suitable for children or adult invalids.

PROPAGANDA FOR REFORM

The A. M. A. Chemical Laboratory.—The A. M. A. Chemical Laboratory cannot analyze specimens for individuals. 1. The chemical work undertaken by the Laboratory must be of *general* interest to physicians. 2. The Laboratory is busily engaged in the work for which it was founded, namely, investigations of the newer remedies for the Council on Pharmacy and Chemistry. 3. The Laboratory undertakes examination only of products in original containers, bearing original labels and the source of which can be vouched for in case of possible court action. 4. The present Laboratory would need much enlargement and a far larger staff to examine specimens for all of the one hundred thousand physicians it is designed to serve. (Jour. A. M. A., October 3, 1931, p. 1001.)

Book Announcements

An Introduction to the Literature of Vertebrate Zoology. Based Chiefly on the Titles in the Blacker Library of Zoology, The Emma Shearer Wood Library of Ornithology, the Bibliotheca Osleriana and Other Libraries of McGill University, Montreal. Compiled and edited by CASEY A. WOOD, M. D., LL. D., Collaborator, Division of Birds, Smithsonion Institution. Oxford University Press, London. 1931. Quarto of xix-643 pages. Colored frontispiece. Cloth. Price, $15.00.

The Human Voice. Its Care and Development. By LEON FELDERMAN, M. D., Associate Editor of Eye, Ear, Nose and Throat Monthly. Henry Holt and Company. New York City. 1931. Illustrated. Price, $2.50.

Metropolitan Life Insurance Company Pamphlets. GOOD HABITS FOR CHILDREN. Prepared with the Cooperation and Advice of the National Committee for Mental Hygiene. THE CONQUEST OF TYPHOID FEVER. GOOD TEETH. Illustrated. FIRST AID. Illustrated. Copies of these pamphlets may be received from the Welfare Division of the Metropolitan Life Insurance Company, New York City.

Infections of the Kidney. By MEREDITH F. CAMPBELL, M. D., F. A. C. S., Attending Urologist, Babies Hospital, New York Nursery and Child Hospital; Assistant Visiting Urologic Surgeon, Bellevue Hospital, New York. Harper's Medical Monographs. Harper and Brothers. New York and London. 1931. 12 mo. of xii-343 pages. Leatherette. Price, $3.00.

The Rockefeller Foundation. Annual Report. 1930. The Rockefeller Foundation, 61 Broadway, New York. Octavo of xi-380 pages. Illustrated. Paper.

Virginia Medical Monthly

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Editorial

Survey of the Venereal Diseases in the City of Baltimore.*

Practitioners of medicine, no matter what may be the special field of work, naturally feel a live interest in the prevalence and incidence of venereal diseases. Much of the pathology of the clinics of college days as well as that of later working years in practice touches in one way or another the problems involved in the processes of venereal diseases. Were it not true that in various ways one's practice is affected or influenced by the propagation of venereal disease, academic interest in a survey of this problem by the agencies of the U. S. Public Health Service would be aroused, particularly so would this be interesting to Virginia physicians when the survey has been made in the large and neighboring city of Baltimore.

Under the suggestion and request of the Baltimore City Medical Society, the U. S. Public Health Service and the American Social Hygiene Association undertook the desired survey of the prevalence and incidence of venereal disease in Baltimore City. The methods adopted are fully explained in this report. In general, it consisted in sending to each physician, hospital, institution or clinic a questionnaire requesting a report of the number of cases of syphilis and gonorrhea under treatment on a given date and the number of cases reporting during the preceding month "who have never previously received treatment for their current infection." The Baltimore-day for the prevalence survey of venereal disease was June 16, 1930, while the one month period for determining incidence and number of infections reporting for treatment for the first time was from May 15 to June 15, 1930.

The accuracy, dependability and completeness of such a survey is affected by various factors. Of first importance comes the willingness of the physicians and institutions questioned to cooperate in giving the information requested and, secondly, the assumption that persons so affected present themselves to authorized medical agencies for treatment. Inaccuracies arising from physicians failing to report and also from the fact that some infected persons fail to apply to authorized medical agencies for treatment can only make the rate obtained by the survey minimum rather than excessive. The authors make appreciative comments, in this connection, upon the fine cooperative spirit of the medical profession, which they have enjoyed in previous surveys throughout the country. In Baltimore the same splendid cooperation was experienced. The 1,120 physicians of Baltimore made a 100 per cent return of the questionnaires. Quacks, charlatans, herb doctors, and the like, however,

*A Special Article by Taliaferro Clark, Assistant Surgeon-General and Lida J. Usilton, Associate Statistician, United States Public Health Service—Venereal Disease Information, Vol. xii, No. 10.

it was found treat many patients of whom no record can be made. In the City of New Orleans, a recent survey disclosed that 3,400 applications to drug stores were made monthly for advice, remedies and treatment for syphilis or gonorrhea. These conditions, of course, make a complete census impossible but the figures reached, based on recognized and authorized reports, are significant and important.

The venereal day census in Baltimore, June 16, 1930, showed that there were 10,707 cases of venereal disease in that city under treatment. Of this number 72 per cent were in public clinics and institutions or hospitals and 28 per cent were in the hands of private physicians. Remarkable to say, less than one-fourth of private physicians had one or more venereal disease patients under treatment and 90 per cent of those in the hands of such private physicians were being treated by over 11 per cent of the physicians of the city.

While 72 per cent of venereals in Baltimore were being treated by public clinics, in Philadelphia the proportion was 55 per cent, in Cleveland 42 per cent, and in New York and Detroit 35 per cent. It was not quite clear how Baltimore showed so large an increase in public clinic patients in venereals over the other cities just given. The rate per 1,000 population for the venereals (syphilis and gonorrhea) in Baltimore was 13; the prevalence rate for syphilis was twice as high as for gonorrhea, being 9 for syphilis and 4 for gonorrhea. White males were much greater in frequency than white females while colored females for syphilis were slightly higher than the colored male. The colored males were five times that of white males and colored females eleven times that of white females. The survey revealed that there were two kinds of treatment available—one was at the hands of private physicians and the other was by public institutions and clinics. The significant point in this survey is that 11 per cent of the physicians of Baltimore were caring for 90 per cent of the cases of venereal disease treated by private physician, that the number of cases treated by the licensed and authorized private practitioners was only 28 per cent of the total number and that public and free clinics were treating 72 per cent of the total 10,707 cases as of June 16, 1930. While this figure of the Baltimore public clinic management of venereal cases was much higher than other cities, the fact remains that the bulk of the treatment of venereal diseases is in the hands of public and free clinics and not in the hands of private practitioners. Besides there must be a considerable number of venereal cases under-treated or improperly treated by quacks and charlatans.

Putting together the 72 per cent of cases treated at public and free clinics and the cases that are treated by quacks and charlatans, it is quite apparent that there is operating a very potential influence in the field of illness that diverts the patients from private practitioners. The factor appears to be the cost involved. The fact that such cases are treated for small cost draws them to public institutions. The question arises whether or not the private practitioner is not being supplanted in the fight against these diseases by agencies not so effective and personal, to say nothing of the importance of having the full support of practitioners in the work of carrying on prophylactic or preventive measures.

Public Health agencies may think on this problem in the light of assisting the private practitioner in serving at low cost adequate medical service. The suggestion that comes through a French source may be worth taking under consideration. In France in one region, the Commission for Prophylaxis of Venereal Disease furnishes medicines free to general practitioners who will avail themselves of it. These physicians send specimens of blood and spinal fluid to the state laboratory for examination. The medicines are furnished with as little formality as possible.

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

Plans for the Year.

In expending its appropriation of $500 to carry forward a post-graduate educational program the Department of Clinical Education will, as in the past, seek primarily to assist those officers and strengthen those organizations that are already devoting their efforts to scientific meetings. Only a minority of the

component societies, and those perhaps of largest membership, can hold regular sessions for other than business and social purposes. Many county units may, however, be engaged in ascertaining and meeting the educational needs of the group in some degree, and the Department wishes to establish a working relationship with them.

To this end letters of inquiry have been sent by the Chairman of the Department to the councilors and secretaries of all societies to elicit such information as the following: What groups are emphasizing clinical and scientific meetings? What is the nature of their instructional program? Can the Department give any help from the funds at its disposal in arranging the list of speakers on the subjects desired, or can its clerical office aid in publicity by mailing notices, with or without reply cards and follow-ups? Can reports of proceedings be furnished for publication in the Medical Monthly? Is it possible to secure and desirable to insert in the Monthly the registration list of physicians in attendance? For the guidance of the Department in arranging future meetings, can results be evaluated to emphasize the elements that make for success and to eliminate unsatisfactory features? Would a list of speakers qualified in various subjects and willing to take part in programs three or four times a year prove serviceable?

The information obtained from these inquiries will be of great value when the Department holds its re-organization meeting in December to plan its work for the year. At the same time it is expected that definite progress can be made in putting into active operation the program of the Joint Committee for Prenatal and Postnatal Instruction, an agency established for a specific educational task by action of the Department of Clinical Education and supported in part by a contingent appropriation of $2,500 made by the House of Delegates in Roanoke.

One of the most important agencies for postgraduate medical education, the reference library, has made a beginning in Virginia under the most favorable auspices. The library of the Medical College of Virginia places its equipment and the services of its staff as near to any physician as his mail box. Loans of pamphlets, magazines and books are selected to include the most recent and authentic information on any special topic. It is the ambition of the College to have this service widely used and to expand it as rapidly as the demand justifies.

In order to profit by a systematic interchange of ideas, the Department of Clinical Education is endeavoring to make contact with similar agencies in other States. Items and ideas that appear suggestive for Virginia may be gleamed from publications and reports and discussed on this page.

J. C. Flippin, M. D., *Chairman.*
George W. Eutsler, *Executive Secretary.*

Recent Clinic

The usual creditable attendance and unusually lively interest in two new features, ward rounds with heads of departments and a symposium on the liver, marked the regular fall clinic at the University of Virginia Hospital in late October. This two-day meeting was the eighth clinic in the post-graduate series now firmly planted in Charlottesville.

Physicians in attendance for the program included the following:

Altavista—Dr. W. O. Smith.
Arrington—Dr. F. M. Horsley, Dr. B. F. Randolph.
Charlottesville—Dr. J. C. Coulter, Dr. T. H. Daniel, Dr. Anita Lotti, Dr. W. D. Macon, Dr. F. C. McCue, Dr. B. M. Randolph.
Chatham—Dr. C. D. Bennett.
Crimora—Dr. D. P. Bowman.
Culpeper—Dr. H. T. Chelf.
Cuckoo—Dr. E. B. Pendleton.
Elkton—Dr. M. T. McCulloch.
Fishersville—Dr. H. F. White.
Free Union—Dr. W. A. Kyger.
Front Royal—Dr. D. M. Kipps.
Harrisonburg—Dr. J. C. Harshbarger.
Hot Springs—Dr. W. F. Hatcher.
Ivy Depot—Dr. H. L. Baptist.
Kents Store—Dr. S. W. Selden.
Louisa—Dr. H. S. Daniel, Dr. H. W. Porter.
Lynchburg—Dr. D. O. Hamblin, Dr. Ernest Scott.
Martinsville—Dr. H. G. Hammond, Dr. J. A. Shackelford.
North Garden—Dr. Hunter Williams.
Petersburg—Dr. Ruth S. Mason, Dr. F. J. Wright.
Ransom—Dr. T. E. Patteson.
Remington—Dr. H. C. Grant.
Roanoke—Dr. Harry Goldstein.
Sandy River—Dr. J. E. Richardson.
Scottsville—Dr. Percy Harris.
Shenandoah—Dr. W. E. Hisey, Dr. B. C. Shuler, Dr. J. J. Waff.
Stanardsville—Dr. E. D. Davis.
Staunton—Dr. G. B. Barrow, Dr. J. W. Freed, Dr. Wm. A. Murphy, Dr. M. J. Payne, Dr. Alex. F. Robertson, Jr.
Swoope—Dr. W. F. Hartman.
Unionville—Dr. R. M. Shelton.
Waynesboro—Dr. H. T. Hawkins, Dr. J. F. Hubbard.
Woodville—Dr. J. G. Brown.

SCHEDULED MEETINGS

Program of Norfolk County Medical Society

DECEMBER, 1931

MONDAY, 7TH DECEMBER—Monthly business meeting.
MONDAY, 14TH DECEMBER—Section on Surgery.
Surgical Treatment of Lung Abscesses, Dr. Horace G. Ashburn.
Intra-Abdominal Hemorrhage of Ovarian Origin, Dr. Albert V. Crosby.
MONDAY, 21ST DECEMBER—Section on Medicine. Naval Hospital Night.
The Blood Dyscrasias—Capt. C. J. Holeman, M. C., U. S. Navy.
Interpretation of the Schilling Differential Count, Lt. Comdr.. R. F. Sledge, M. C., U. S. Navy.
THURSDAY, 31ST DECEMBER—Section on Eye, Ear, Nose and Throat.
Program to be announced.

The Southside Virginia Medical Association

This Association will hold its last quarterly meeting for 1931 in Petersburg, December 8th, under the presidency of Dr. Ruth Mason, of that city. Dr. R. L. Raiford, Franklin, is secretary. There will be an interesting meeting and officers for the ensuing year will be elected.

Proceedings of Societies

The Mid-Tidewater Medical Society

Met at Millers Tavern in the old Arlington Lodge, on Tuesday October 27th. Practically every county was represented from Caroline and Hanover to the Chesapeake Bay and from the Rappahannock to the James. Dr. William R. Gwathmey, of Middlesex, presided.

At the regular business session a full report of the recent meeting of the Medical Society of Virginia was given by Dr. R. D. Bates, of Newtown. Many things of interest to the rural practitioners were discussed at this meeting, which shows a growing interest in the professional life of the State.

Case reports were made by Drs. Otis T. Amory and E. L. Alexander, of Newport News and by Dr. M. H. Harris and Dr. M. H. Eames, the former on "Arthritis" and the latter on "Rocky Mountain Spotted Fever."

A resolution was adopted by the society as favoring the measures being used by the State Board of Health and commending to all counties the sanitary program, as evidenced by the wonderful results seen in Middlesex, Gloucester, Essex, Mathews, and King and Queen Counties. Many fine reports were made of this work in the various counties.

After a splendid dinner in the dining hall, served by the local physicians, a short afternoon session was held. Dr. F. S. Johns, of Johnston-Willis Hospital, Richmond, reported a very interesting case on "Dextra Cardia with Appendicitis."

Dr. W. A. Campbell, Old Church, and Dr. J. M. Goulding, Tappahannock, were made members.

The election of officers for next year resulted as follows: Dr. R. D. Bates, president; Dr. Blair Spencer, president-elect; Drs. J. W. Smith, W. S. Cox, V. Stiff, J. M. Gouldin, A. W. Lewis, E. T. Sandberg, J. R. Parker, Clarence Campbell, F. J. Wright, L. O. Powell, O. T. Amory, vice-presidents; Dr. M. H. Harris, secretary, and Dr. James D. Clements, treasurer. The next meeting will be held in West Point, Va., on the fourth Tuesday in January.

The Medical Association of the Valley of Virginia

Held its semi-annual meeting October 31st at Winchester, Va., with Dr. Guy R. Fisher, president, presiding. Dr. S. W. Budd, of Richmond, was the guest speaker, his subject being "Cancer." Others on the program were Drs. H. Grant Preston, C. E. Conrad, and N. M. Canter, of Harrisonburg; Dr. Leo E. Hayes, Covington; Dr. Charles O. Dearmont, White Post; Dr. Q. H. Barney, Mt. Sidney; Drs. M. J. Payne and J. F. Fulton, Staunton; Dr. D. M. Kipps, Front Royal; and Drs. P. W. Boyd, Allen T. Hawthorne, Thomas A. Gibson, J. E. Harris, G. H. Smith, Jr., and J. B. McKee, Winchester.

The following officers were elected at this meeting: President, Dr L. M. Allen, Winchester; vice-president, Dr. H. G. Preston, Harrisonburg; secretary, Dr. Alexander Robertson, Jr., Staunton; and treasurer, Dr. Lyle Hansbrough, Front Royal. The Spring meeting of this Association will be held in Harrisonburg.

News Notes

American College of Surgeons.

The annual clinical congress of the College was held in New York City, the middle of October, which was its fourth meeting in that city since its organization in 1913. A number of distinguished surgeons from abroad were in attendance. Dr. Allen B. Kanavel, Chicago, was installed as president, with Dr. Eldridge L. Eliason, Philadelphia, and Dr. Ross Millar, Ottawa, as vice-presidents, and Dr. Franklin H. Martin, Chicago, as Director-General. Officers elected at this meeting were: President-elect, Dr. J. Bentley Squier, New York, and vice-presidents-elect, Dr. C. Gordon Heyd, New York, and Dr. W. Edward Gallie, Toronto.

The following candidates from Virginia were admitted to fellowship:

Dr. Randolph L. Anderson, Richmond.
Dr. Thomas D. Armistead, Roanoke.
Dr. George W. Botts, Norton.
Dr. Donald S. Daniel, Richmond.
Dr. Harry L. Denoon, Jr., Nassawadox.
Dr. Bryant E. Harrell, Norfolk.
Dr. Flavius O. Plunkett, Lynchburg.
Dr. Harry H. Ware, Jr., Richmond.

The date and place of the next annual meeting will be named at the next meeting of the Executive Committee.

Married.

Dr. Joseph Coates, Galax, Va., and Miss Ada Lee Cannaday, Pulaski, Va., October 30th. Dr. Coates is an alumnus of the Medical College of Virginia and took his interne service in Richmond.

Dr. Elam A. Drum and Miss Mattie Elizabeth Walker, both of Richmond, Va., October 24th.

Dr. Troy Howell Hutchinson, Wise, Va., and Miss Jo Ann Martha Donohue, of Sun, W. Va., October 7th. Dr. Hutchinson was graduated from the University of Virginia in in the class of '29.

Dr. Robert Hardin Hackler, Jr., Asheville, N. C., and Miss Harriet Gresham Bates, of Richmond, November 20. Dr. Hackler is a graduate of the Jefferson Medical College, Philadelphia, and recently complete a residency at Memorial Hospital, Richmond, Va.

Medical College of Virginia News.

Governor John Garland Pollard and his advisory budget committee made their biennial inspection of the Medical College of Virginia recently. After a preliminary conference President Sanger conducted the governor and his party through the various buildings of the institution.

A total of 4,634 patient visits were made to the outpatient department of the Medical College of Virginia during the month of October. This is an increase of 842 over October, 1930, when 3,792 patient visits were made. During this month the record of the department for any one day's work was broken, 267 patient visits and a number of individuals turned away.

Admiral Cary T. Grayson, of Washington, D. C., has accepted the invitation of the Medical College of Virginia to deliver the Founder's Day address on December 1st. These exercises will be held in Monumental Episcopal Church at noon. This will commemorate the ninety-fourth session of the institution. Dr. Grayson is an alumnus of the College.

News from the University of Virginia, Department of Medicine.

Dr. C. S. Lentz, Superintendent of the University Hospital, attended the meetings of the American Hospital Association in Toronto, from September 28th to October 2nd.

Surgeon-General Hugh S Cumming, Dr. Karl Voegtlin, and Dr. William C. White visited the Medical School on October 14th and 15th.

The eighth Post-Graduate Clinic, conducted by members of the medical staff, was held at the University Hospital on October 22nd and 23rd. Forty-five physicians were in attendance.

Dr. Eugene L. Opie, Director of the Pathological Laboratory of the Henry Phipps Institute in Philadelphia, delivered the first of a series of Alpha Omega Alpha medical lectures on the afternoon of November 9th. The title of the lecture was Tuberculosis.

Dr. Frederick F. Russell, Director of the International Health Division of the Rockefeller Foundation, and Dr. Frederick M.

McPhedran, of the Henry Phipps Institute of the University of Pennsylvania, visited the Medical School on November 9th and 10th.

Dr. E. K. Marshall, Professor of Physiology at the Johns Hopkins Medical School, spoke before the University Medical Society on the evening of November 9th, on the subject of Renal Function.

News Notes from the Duke University School of Medicine and Duke Hospital.

On November 4th, Dr. R. W. Hegner, of the Johns Hopkins School of Hygiene, lectured at the Duke Hospital on Parasitology.

Dr. Louis B. Wilson, Director of the Mayo Foundation, addressed the Duke medical students and staff, on November 11th.

On November 13th, Dr. Eugene F. DuBois, Professor of Medicine at Cornell University School of Medicine, gave a clinic on Metabolic Factors in Hyperthyroidism and Typhoid Fever, at the Duke Hospital.

At a meeting of North Carolina pediatricians, held at the Duke Hospital on the afternoon of November 13th, the North Carolina Pediatric Society was organized.

The regular meeting of the Durham-Orange County Medical Society was held on the same date at the Duke Hospital and Dr. J. C. Gittings, Professor of Pediatrics at the University of Pennsylvania School of Medicine, spoke on Tuberculosis in Childhood. Dr. Gittings also gave a clinic on the morning of the 14th.

The Seaboard Medical Association of Virginia and North Carolina

Is holding its annual meeting at Suffolk, Va., December 1, 2 and 3, under the presidency of Dr. James H. Culpepper, of Norfolk, Va. Headquarters and scientific meetings are at the Hotel Elliott. An interesting program has been arranged and a hearty welcome is extended all doctors.

Dr. W. H. Batte,

Recently of Bluefield, W. Va., is now located at 47 West Main Street, Penns Grove, N. J., for the practice of his profession.

Dr. C. P. Ryland,

Who has been practicing for a time at Buena Vista, Va., in early November located at Round Hill, Va.

New Division to Promote Psychiatric Education and Develop Trained Personnel Established by The National Committee for Mental Hygiene.

The National Committee for Mental Hygiene has been concerned for some time by the lack of trained psychiatrists to fill important positions. With more and more mental hospitals becoming active treatment centers, and with the rapid development of psychiatric services in connection with general hospitals, schools, courts, correctional institutions, social welfare agencies and other centers, there has ensued an unprecedented need for workers qualified for responsible posts in this important field, and there is a danger that standards may not be maintained.

Of the approximately 160,000 physicians in the United States, somewhat over 40,000 are specialists in the various branches of medicine, and of these but 1,600 are psychiatrists, so there are a hundred times as many doctors in physical as in mental medicine. This is out of all proportion to the magnitude of the problem of mental and nervous disease.

To carry out the plan, a new Division of Psychiatric Education has been created in the office of The National Committee for Mental Hygiene, with the aid of The Commonwealth Fund, The New York Foundation, and The American Foundation for Mental Hygiene, all of which have contributed to the support of the project.

The Division is under the immediate direction of Dr. Ralph A. Noble, of Sydney, Australia, who has a wide knowledge of psychiatric education in Europe and America and was invited to this country to inaugurate the work of the new Division and to take active charge of the program; and associated with him is Dr. Franklin G. Ebaugh, Director of the Colorado State Psychopathic Hospital, who is familiar with psychiatric training problems in this country and has given the subject special study.

The Division will have the benefit of the services and counsel of an Advisory Committee composed of leading medical and psychiatric educators who will meet regularly to study new problems and to guide the development of the program in general.

The main objectives of the program will be: to work out further schemes for recruiting and training psychiatric and mental hygiene personnel; to secure more qualified candidates

for psychiatric and mental hygiene work; to appraise and to assist in the development and improvement of existing educational facilities; to study the programs at present being followed in the teaching of undergraduates and graduates in medical schools; to administer fellowships; and to assist in placing trained personnel in university, hospital, and community mental hygiene work. The work of the Division will center largely around the medical schools with a view to the development of adequate psychiatric teaching and the training of graduates and undergraduates in this subject.

A study is now being made of the status of psychiatry in medical school curricula and it is planned to visit sixty or more medical schools in the country. Conferences will be held with deans of medicine, professors of psychiatry, psychology, pediatrics, and other department heads, and when requested recommendations will be made for the future development of psychiatric teaching in both graduate and undergraduate fields. Effective ways of increasing student interest in psychiatry will be studied and a systematic plan for recruiting candidates for this subject will be worked out.

It was considered desirable by the Executive Committee that the Director of this work should continue to be connected with a leading teaching center so that he might remain in intimate touch with teaching problems in psychiatry. Such a link with teaching work has been secured by Dr. Noble's association, on a part-time basis, with Yale University, as Clinical Professor of Psychiatry and Mental Hygiene.

Dr. John H. Greene,

Recently of Brownsburg, Va., has moved to Slab Fork, W. Va., where he will be engaged in practice.

Dr. Leslie T. Gager,

Washington, D. C., clinical associate in medicine at George Washington University Medical School, that city, has been appointed professor and head of the department of medicine at Howard University School of Medicine.

The Southern Surgical Association

Will hold its annual meeting at White Sulphur Springs, W. Va., December 8, 9 and 10. An interesting program will be presented by members and there will be an address on "The Influence of Southern Surgeons on My Professional Career," by Dr. Wm. J. Mayo, invited guest of Rochester, Minn. Dr. Carrington Williams, Richmond, Va., is chairman of the committee of arrangements. Dr. Hugh H. Trout, Roanoke, Va., is this year's president, and Dr. Robert L. Payne, Norfolk, Va., secretary.

Dr. George M. Burton,

Formerly of Augusta County, Va., but more recently of Weston, W. Va., is spending some time in Marion, Va., on account of bronchial trouble. While there, he will continue his practice in eye, ear, nose and throat work.

Christmas Seals and Science.

As the annual Christmas seal sale opens this year, marking the twenty-fifth anniversary of the continuous, organized war on tuberculosis in the United States, the question may arise in the minds of thinking people why science has not developed some quick and certain cure.

Research workers have been faithfully at work on this problem but as yet without success. The control of tuberculosis must still be based on accurate early diagnosis and the perfection of treatment by means of recognized methods, rest, fresh air, and nursing care. The disease kills only one person today where it killed two a quarter of a century ago. Nevertheless, tuberculosis is still a major public health problem. More people between the ages of 15 and 45 die of it than any other disease.

In spite of its failure to discover a specific cure, science has quite recently made two advances in the study of tuberculosis of great practical value. One is the purification of tuberculin—the substance used everywhere to detect infection, so that results from its use are sure to be uniform; the other assures making X-ray pictures free from blurring and of standardized depth of shadow. Both these contributions to tuberculosis work increase the physician's ability to make early and accurate diagnoses which, in turn, increases the hope of cure.

The new tuberculin will be known as "MA-100." For many years tuberculin has been used as a simple and harmless test as a means of determining infection. The old tuberculin contained ingredients other than the active principle, some of which might cause reaction when there was really no infection at all. In addition to this, it was impossible to graduate the dosage uniformly, because the substance was not pure, and this interfered with that accurate study and comparison of results upon

which medical science depends for progress in human betterment. The new tuberculin makes a great step forward and comes as a result of several years research in a number of laboratories by scientific men working under a cooperative plan, as a Research Committee of the National Tuberculosis Association. This is the organization which sponsors the Christmas seal sale through its 2,084 local associations and committees throughout the United States, and part of the money raised through the seal sale goes to pay the expenses of such research.

By such gradual advances as these the relentless campaign against tuberculosis is waged. They are not spectacular instances of brilliant inspiration, but rather striking examples of careful, plodding work such as characterizes the-all-year-round efforts throughout the nation to prevent and cure tuberculosis, which are financed by the Christmas seal sale.

Sixth Annual Graduate Course.

The staff of the Gill Memorial Eye, Ear and Throat Hospital announces to the profession the Sixth Annual Spring Graduate Course in Ophthalmology, Otology, Rhinology, Laryngology, Facio-Maxillary Surgery, Oral Surgery, Bronchoscopy and Esophagoscopy, April 4, to April 9, 1932. The class is strictly limited and the members are registered in order in which the matriculation fee is received. The matriculation fee is $50.00 of which $15.00 must be paid the date of registration. We emphasize the personal contact of the student with the instructors. Round table discussions are held daily.

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For further information, address the Superintendent of Gill Memorial Eye, Ear and Throat Hospital, Box 871, Roanoke, Va.

Dr. Thomas A. Gibson

Has located at 19 West Boscawen Street, Winchester, Va., and is limiting his practice to pediatrics. He is an alumnus of the University of Pennsylvania School of Medicine and spent sometime studying in New York City, following a service as House Officer in the Children's Hospital of Cincinnati.

Dr. D. Hunter Marrow,

After a summer spent at his home in Boydton, Va., has left for Daytona Beach, Fla., where he will spend the winter as has been his custom for some years.

The Blind and Deaf Mutes in the United States.

Statistics of the blind and deaf mute population enumerated in connection with the 1930 census, classified by sex, color, and age, have been issued by the Bureau of the Census in a bulletin entitled, "The Blind and Deaf Mutes in the United States; 1930." This is a pamphlet of twenty-three pages, consisting mainly of statistical tables, showing the enumerated blind and deaf mutes by geographic divisions and States as well as by cities of 100,000 inhabitants or more. A copy may be obtained by writing to the Bureau of the Census, Washington, D. C.

A total of 63,489 persons were reported as blind by census enumerators, and the ratio of blind to the general population, on the basis of the returns, was 517 per million.

A total of 57,084 persons were reported as deaf mutes, the ratio of deaf mutes to the general population, on the basis of the returns, being 465 per million in 1930.

In addition to those reported by enumerators either as blind or as deaf mutes, there were 1,942 persons reported in 1930 as being blind, deaf mutes.

In addition to the statistical tables, the bulletin contains a brief history of the enumeration of the blind and of deaf mutes and a comparison of methods and results since the first enumeration, which was made in connection with the census of 1830.

Cancer.

According to a report from the United States Public Health Service, cancer today presents the outstanding problem in the field of public health. In 1900 when the registration area was first formed, the crude death rate from cancer was 63 per 100,000 population. In 1929, it was 96.1, or an increase over the crude death rate of 1900 of nearly 52½ per cent. In 1929 the total number of deaths from cancer was 111,569. This makes cancer the

second most important cause of death, heart disease alone with 245,000 deaths claiming a greater number of victims. Among all deaths in men between the ages of 45 and 70, one in eight is due to cancer, and among all the deaths which occur among women between 45 and 65, one in five is caused by cancer. The most prevalent site of fatal cancer is the stomach, with 38 per cent of the total deaths. Cancer of the breast caused 9 per cent and cancer of the skin caused 3 per cent of the deaths.

Dr. J. O. Mundy,

For some time of Barboursville, Va., has located in Charlottesville, Va., with offices at 112 East High Street.

Federal Food and Drugs Act 25 Years Old.

The Federal Food and Drugs Act was twenty-five years old on June 30, 1931, and every amendment enacted so far has strengthened that law, according to W. G. Campbell, Chief of the Food and Drug Administration, U. S. Department of Agriculture. This Act, which came into being in 1906, and which was drawn up by the late Harvey W. Wiley, had as its initial purposes—first, to insure the purity of foods and drugs, and second, to protect consumers from economic fraud. In the twenty-five years of the law's existence, more than 18,000 regulatory actions have been instituted.

During the past year Administration officials caused the seizure of 570 falsely and fraudulently labeled proprietary medicines, according to Mr. Campbell. Of these, 123 were preparations falsely labeled so as to state or imply that they were effective remedies against influenza. Other preparations were labeled with false curative claims for such serious diseases as rheumatism, malaria, diabetes, tuberculosis, etc.

Continued regulatory activity against ether unfit for use as an anaesthetic has resulted, in the last six years, in a gratifying improvement in the quality of anaesthetic ether on the American market. Of 6,189 samples examined during the calendar year 1930, only 313, or 5 per cent, were found to be below U. S. P. quality. This figure compared to 34 per cent in 1926, indicates great improvement in the methods of manufacturing, shipping, and storing ether, as well as beneficial effects which continued regulatory activity, under the food and drugs act, has had upon this important commodity.

The country-wide survey, begun in 1928, of products subject to the caustic poison act, was completed, and Mr. Campbell estimates that at the close of the last fiscal year, 70 per cent of the many thousands of labels encountered complied exactly with the law.

This is but a small amount of the splendid work done by the Food and Drug Administration.

New Tuberculosis Sanatorium in Norfolk.

The dedication exercises of the Doctor Charles R. Grandy Sanatorium were held on November 5th. This sanatorium is situated near Norfolk and is to be devoted to the purposes of a municipal building for patients threatened with or suffering from tuberculosis. It is named in honor of Dr. Grandy, of Norfolk, and is a tribute to the esteem in which he is held as a public-spirited citizen and worker in the cause of public health. Dr. Grandy is a former president of the Medical Society of Virginia.

Dr. Joseph Collins,

Widely known neurologist of New York City, was guest of the Richmond Academy of Medicine at its meeting on October 27th. The subject of his talk was "In Dispraise of the Doctor."

Dr. Samuel L. Rucker, Jr.,

Has located at Moneta, Va., where he has taken over the practice of his father, who died early this Fall. Dr. Rucker, Jr., graduated from Medical College of Virginia, Richmond, in 1930, at which time he received an appointment for internship at Memorial Hospital, this city.

Group Publicity to Feature Dental Education.

The American Dental Association in its National Convention, held at Memphis, Tenn., October 19th to 24th, has decided to advertise. However, the advertising will not be in any sense commercial or individualized, but will be publicity on the highest plane possible, and will be devoted exclusively to dental education.

This publicity will be handled by the American Dental Association through a new bureau that has been organized and which will keep the public informed on the care of their teeth, mouth hygiene, proper diet and the prevention of dental troubles. The theme of the publicity

will be along the lines of prevention, and, if heeded by the public, will save the people of America millions of dollars in dental bills. Newspapers, magazines, radio and other forms of advertising media will be used in this publicity program, but in no sense will any individual dentists' names be mentioned nor fees quoted.

Such group publicity in the form of dental education was started in Little Rock, Ark., in August, 1930, and brought such favorable response and comments from leading dentists, educators and the press that it was decided after such a test to allow the dentists of the country to resort to similar publicity in a likewise ethical manner.

State Secretaries and Editors Meet.

The annual conference of State Secretaries and Editors of constituent State Medical Associations was held in Chicago, Ill., on November 13th and 14th, at the headquarters of the American Medical Association. Those attending were guests of that organization as is usual for this meeting. This contact with the national organization is a great stimulus for better work.

Dr. Olin West, secretary of the A. M. A., had prepared a most interesting program by excellent speakers. In addition to remarks by several officers of the A. M. A., the following subjects were discussed:

- Official Records,
- Practice of Medicine by Lay Organizations,
- Editorial Problems,
- Medical and Hospital Service for Veterans,
- The Hospital and Its Staff as a Practicing Group,
- Coordinating the Work of Five County Societies,
- The Significance of Medical Leadership,
- The Way of Medical Insurance.

All of these papers will appear in early issues of the *Bulletin of the American Medical Association.*

Dr. George H. Smith, Jr.,

Who recently completed two and a half years' work in the Post-Graduate Hospital, New York City, has located in Medical Arts Building, Winchester, Va., where he is limiting his practice to diseases of the ear, nose and throat. He graduated several years ago from George Washington University, Washington, D. C.

Health Examinations for Students.

The University of Pennsylvania inaugurated the plan of giving every freshman reporting for the fall term a complete physical examination. If defects were found of a nature so serious as to deem it unwise for a student to pursue his university course, the student was advised in time that he might make necessary adjustments and efforts will be made to induce others with defects to have them corrected.

Civil Service Examinations.

The U. S. Civil Service Commission, Washington, D. C., announces open competitive examinations for Senior medical officer, Medical officer, Associate medical officer; Chief nurse and head nurse (Indian Service), and Graduate nurse and graduate nurse, visiting duty (various services). Applications for all of these positions should be on file with the Commission not later than December 30, 1931.

Dr. J. M. Bailey,

Hopewell, Va., is spending sometime in Philadelphia, where he is taking up special work at the University of Pennsylvania.

Dr. Walter S. McClellan,

Medical director of Saratoga Springs, New York, recently visited White Sulphur Springs, W. Va., and Hot Springs, Va., from which place he went to Warm Springs, Ga., for a conference wtih Governor Roosevelt.

Scientific Exhibit at New Orleans.

The Committee on Scientific Exhibits of the New Orleans meeting of the American Medical Association has issued its call to those interested in having exhibits at its session May 9-13, 1932. Dr. Thomas G. Hall, Director of this feature, states that applications for space must be filed with him at 535 N. Dearborn Street, Chicago, Ill., before January 20, 1932.

Dr. Tom A. Williams,

Neurologist, formerly of Washington, D. C., but who has been practicing in Florida for several years, announces his removal to The Esplanade, Miami Beach, Fla.

Dr. E. N. Lillard

Announces that he has located at Barboursville, Va., where he will continue the practice of his profession.

After-Care for Infantile-Paralysis Victims.

New York City hospitals caring for infantile-paralysis patients have been requested to report the discharge of such patients to the Children's Welfare Federation of that city,

which has undertaken to see that they have proper after-care. Nursing organizations in each borough have agreed to give treatments under the direction of a physician, and, when necessary, to connect patients with orthopedic clinics and to provide braces and transportation. Cases not registered with the federation will be followed up by health-department nurses. This plan has been adopted with the approval of the hospitals and the city commissioners of health, according to an announcement in the *Journal of the Americal Medical Association.*

Scholarships for Veterans' Children.

A report from California announces that 50 children of men who died in service in the World War have already received California State scholarships in compliance with a State law passed in August. This law provides that young persons between 16 and 21 years of age who are dependent children of such veterans may be granted allowances not to exceed $50 a month or $450 a year to be used for tuition, books, supplies, or living expenses in public or semipublic schools of the State. If such schools are not available the money may be used for private tuition.

Costa Rica Promotes Child Welfare.

At the request of the new Costa Rican Bureau of Child Welfare, an exhibit of child-welfare posters was recently sent to that country by the United States Children's Bureau. The first bulletin of the new bureau reports that its primary purpose is the prevention of maternal and child mortality. It also aims to give information and advice on child welfare and to establish playgrounds, hospitals, health resorts. and other enterprises to promote the mental, moral, and social welfare of children.

Obituary Record

Dr. Daniel Shelly Solliday,

Of Hillsboro, Va., died November 3rd, after an illness of two weeks of prostatic hypertrophy. He was born in Allentown, Pa., in 1863. Following his academic education, he studied medicine at the Starling Medical College, Columbus, Ohio, and the Medical College of Virginia, graduating from the latter institution in 1900. Dr. Solliday had practiced continuously in Hillsboro since his graduation. He was a member of the Loudoun County Medical Society and the Medical Society of Virginia. His wife and six children survive him.

Dr. Samuel L. Rucker,

Moneta, Va., died at his home in that place on October 4th, at the age of sixty-one years. Dr. Rucker studied medicine at the former University College of Medicine, Richmond, Va., from which he graduated in 1897. He was a member of his local medical society and had been a member of the Medical Society of Virginia for nearly thirty years. His wife survives him. A son, Dr. S. L. Rucker, Jr., has taken over his practice.

Dr. Ligon J. Marshall,

Well known physician of Broadway, Va., died at the hospital in Harrisonburg, Va., November 23rd, from injuries received the night before, when his automobile plunged over an embankment on the Spotswood Trail, near the top of the Blue Ridge Mountains, east of Harrisonburg. He was en route to Goochland County to hunt with some friends. Dr. Marshall was fifty-seven years of age and graduated from the Baltimore (Md.) Medical College in 1900. He had been a member of the Medical Society of Virginia for several years. He moved to Broadway about nine years ago from Marlinton, W. Va. Two daughters survive him.

Dr. Thomas Whitelaw Sims,

Of Eheart, Va., died at Memorial Hospital, Richmond, Va., September 18th, death being due to cerebral hemorrhage. He was sixty-three years of age and a graduate in medicine from the University of Virginia in 1893.

Dr. John Whitridge Williams,

Prominent obstetrician of Baltimore, died October 21st, following an operation. He was sixty-five years of age and received his M. D. degree from the University of Maryland in 1888. Dr. Williams had been professor of obstetrics at Johns Hopkins University School of Medicine since 1899. He also served as dean of that Medical School from 1911 to 1923. Dr. Williams was especially noted for his share in the advancement of obstetrics as a specialty. His Textbook of Obstetrics, appearing in 1903, had reached a sixth edition in 1930.

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OFFICIAL ORGAN OF THE MEDICAL SOCIETY OF VIRGINIA

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RICHMOND, VA., JANUARY, 1932

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MEDICINE IN VIRGINIA

in the Eighteenth Century

By

WYNDHAM B. BLANTON, M.D.

MEDICINE in America during the eighteenth century was not greatly different from that of the preceding one. Doctors born and educated in England dominated the profession, and at the same time quacks were more numerous. Toward the end of the century increasing numbers of young men sought a medical education abroad. The latter years of the century witnessed also the rise of a truly American medicine—the beginning of medical societies, hospitals and a native literature. Americans made notable contributions toward inoculation. There was daring frontier surgery, good botanical observation, the development of first-hand knowledge of certain epidemic diseases, and a noticeable tendency on the part of outstanding men to enter the medical profession. The patriotic service of the medical men during the American Revolution, as well as the political and military achievements of numbers of physicians in this century, show what a superior order of men many of them were. For Virginia this century was a golden age. In wealth, size and power she stood first among the colonies.

The wealth of historical material bearing on the many phases of Virginia medical history in this century has been for the first time adequately investigated. Many curious and important facts have been brought to light—facts which reflect the whole state of American medicine during this period. Whereas the book deals with medicine in Virginia it can in no sense be considered of purely sectional interest.

The volume contains 500 pages, size 7½ x 10½ inches. It is printed on natural color, antique finish, rag paper, and bound in heavy-weight Irish Linen with an all-over design by Charles W. Smith. The thirty-five full page illustrations include engravings and silhouettes of prominent physicians of the Eighteenth Century, newspaper advertisements, college diplomas, title pages from medical and historical books of the period, and apothecary shops.

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THE MENTAL HYGIENE MOVEMENT.*

By RALPH P. TRUITT, M. D., Baltimore, Md.

It is a rare privilege to appear on the program of the Medical Society of Virginia. I feel greatly honored and delighted to be with you.

Undoubtedly you have been told before by invited guests that your Commonwealth, since its founding, has been steeped in traditions. Allow me to say, however, that not one of those traditions is more honorable or reflects more the attitude and interest of the medical profession and its citizens, in relation to my subject, than the fact that it was in Virginia that the first and the third state hospitals for mental diseases were erected on the American Continent. Let me hasten to add that this early building program was not initiated because there were more insane in Virginia than elsewhere. I feel confident that these hospitals were an outgrowth of human kindness, sympathy, and insight into the institutional needs of those mentally ill, because such has always been the attitude of your profession and citizens.

Mental diseases appear to have existed from time immemorial. From the Old Testament one learns that Saul had his periods of depression when the evil spirit of the Lord appeared, and that Nebuchadnezzar had his delusions and believed himself changed into an animal; from the pages of Homer it is learned that Ajax was tortured by the Furies until he fell upon his own sword, and that Ulysses simulated madness to prevent his going to battle so that he might remain at home with Penelope. The famous Oracles were perhaps not altogether attributable to fraud but possibly related to our own witchcraft. During the Medieval Age, the insane were turned outside of the walls of the cities to exist as they could. Later they were placed behind walls and there originated the "lunatic asylums" of our generation. These asylums were the outgrowth of the attitude that society had to be protected and there its duty ended. The history of these institutions bears a striking resemblance to the "pest houses" of medical history.

The history of mental disease has always been closely interwoven with strange feelings, beliefs and actions in the minds of people. The demand for explanation, a fundamental characteristic of the human mind, has ever been present. The possession theory, gods or demons, early held sway in relation to mental disease. In one case they were worshipped, in the other tortured. Most of us have long appreciated that lunar changes, among other things, are concerned with the ebb and flow of water tides, and not with the emotional fluctuations of human minds. It is not an easy matter to erase the meaning of the word "lunatic" from the minds of people, and to remove it from the names of hospitals and from the musty laws governing the insane.

At any rate, I think you will agree that the historical background of mental disorders, so hastily sketched, has caused stigma and fallacy, apathy and prejudice, which will long endure. After all, educational endeavor is a slow and tedious process and perhaps no field has presented a greater upstream current struggle than that confronting the mental hygiene movement. The history of general medicine is pregnant with ignorance and fallacies which existed regarding disease until facts were established and made known. While all facts in regard to both physical and mental diseases are not clear, far more is known in the mental health sector than is actually being utilized. It is a relatively simple matter to teach laymen to protect their health when tangible physical measures are at hand, but it is another matter to educate people to change emotional attitudes and habits of long duration. It was essentially on an educational basis that the mental hygiene movement was founded.

*Read by invitation as part of the Symposium on Mental Hygiene before the Medical Society of Virginia at its sixty-second annual meeting in Roanoke, October 6-8, 1931.

The first public effort in mental hygiene occurred in Connecticut in 1908, when a local committee was organized. The National Committee for Mental Hygiene was founded the next year. It was at this time that the term "mental hygiene" was first used to designate the movement. Both organizations were founded, and in fact the movement was started, by a young man, a Yale graduate who, some years previously, had suffered from a mental disease which had necessitated his confinement for a few years in private and public institutions for the insane. The treatment which he received, and the treatment of others observed by him, caused him to study the institutional situation and the needs of the insane. His experiences and studies were published in a book entitled "A Mind That Found Itself." As a result of his activities he was able to rally to his cause scientists and philanthropists, and the mental hygiene movement was under way. There followed a number of organizations in other cities and states of this country, and the movement eventually spread abroad. In 1922 the International Committee for Mental Hygiene was organized, comprising several countries, and in 1930 the First International Congress on Mental Hygiene assembled in Washington, D. C., attended by delegates and representatives from practically every country in the world. Thus what was believed by the skeptics to be the grandiose delusion of an "exraving maniac" developed into a program for world mental health. The origin and history of the mental hygiene movement is perhaps one of the most striking and fascinating happenings in our day. Mr. Beers, the founder of the movement, continues to promote mental hygiene as secretary of both the National and the International Committees. He has been highly honored by medical and other scientific bodies, and by universities, both in this country and abroad.

The advance guard of physical hygiene was well entrenched when the mental hygiene movement started twenty-three years ago. During its earlier years the movement was principally concerned with consideration of the problems of the insane and feeble-minded. The initial program involved the immediate problems of housing, the legal aspects, the improved medical care and treatment of these disorders. Studies in various parts of the country resulted in better mental hospitals and training schools and also led to the supervision of many of these individuals in the community. From the outset the attempt was made to humanize the attitude of the public toward the insane and to stimulate study of the causes and prevention of mental disorders. Some of the causes of behavior and mental disorders have not as yet been specifically revealed. Perhaps many of these causes will never be recognized in the laboratory under the microscope or in "pure culture" as have the majority of physical diseases. Possibly psychiatry was designated "the poor step-sister of medicine" because the principles and practice of medicine and surgery, and the methods and techniques of the laboratory, when applied to mental disorders, have not been highly productive in revealing specific germs and pure cultures. Actually a great deal has been accomplished, from the purely clinical and laboratory angles, since psychiatry has had a speaking relationship with medicine. An outstanding instance has been the discovery of the spirocheta pallida in the brains of those suffering with paresis and the treatment of this disease. Undoubtedly persistent research will reveal further, if not such specific, causes for some of those mental disorders which continue to puzzle us. There is, however, every reason to believe that the greatest advances in psychiatry will come from joint studies in the laboratory, in the clinic and in society itself. Heredity may be an important factor in certain kinds of behavior and mental disorders. Its exact nature and extent may become more clear as research progresses. Possibly lay education may be one of the greatest controlling forces. For others, supervision in the community, segregation in institutions and sterilization, are already at work. While trauma has always been considered a great factor in causing major behavior and mental disorders, we now know that this factor has been greatly over-emphasized. It is probably true, however, that the present machine age and the age of workmen's compensation, has increased the minor nervous and mental disorders. Although obstetrics and industry may seem far apart in their respective fields, nevertheless they are both playing an important preventive role in relation to trauma. Toxic agents, infective and exhaustive diseases, arterio-sclerosis and senility, as causative factors, contribute their quota of mental disorders. Puberty, the menopause, and childbirth especially since the

aseptic management of labor, are gradually being robbed of the prominent place they have held as separate and distinct causes of mental disorders.

In our earlier years we were probably too eager to interpret the causative factors in mental disorders in terms of the immediate precipitating circumstances. We undoubtedly failed to recognize or evaluate the multitude of possible factors entering into the disease picture, but possibly precipitated at a certain age level, or perhaps by a single circumstance, or by some toxic or other inter-current agent. In practically all mental deterioration processes, whether known to be specifically organic in nature or not, one finds the ear marks of the individual and his personality. It is these and other facts that have caused our understanding of the causes of behavior and mental disorders to include a study of the whole individual and his total environmental life. Alcohol may precipitate mental disease but the causes may lie in the individual's unhappy social adjustment and this in turn may go back to his childhood where many factors were at work. It has been said that it is in the individual's social relations that his mental history is largely written. There may be further specific causes for certain behavior and mental disorders but study in relation to the "conspiracy of causes" appears to offer a fertile field for exploration.

The gradual shift of attack from the most pathological to the preventive aspects is a familiar occurrence in medicine. Research effort, at first directed toward so-called insanity, later included border-line mental states and other nervous-mental disorders whose existence in the community had to be handled by other methods than institutionalization. It has been during the latter years of the movement that its interests have been largely centered about the psychoneuroses, the various twisted and distorted personalities, and behavior problems in children and adults. It was early learned that these less bizarre and more mild disorders greatly exceeded the major mental diseases. With the recent growth of knowledge in regard to causes and treatment of mental disorders, the movement has increasingly directed its attention toward the prevention of all types of mental disabilities and the promotion of better mental health.

A fairly recent phase of the mental hygiene movement is the development of clinics for the study and treatment of problem children. We cannot be content with mere disposal of the waste products of civilization and must intervene earlier if we are to save ourselves from their accumulation. Considerable study has been necessary to reveal some of the early causes of mental and behavior disorders and to show the connection between dependency, delinquency and mental disease and such apparently benign and early symptoms as those we see in the problem child.

Actually, such traits as enuresis, food habits, temper tantrums, hypersensitiveness, disobedience, lying, stealing, etc., are symptoms of something gone wrong in the mental health of a child, just as underweight, temperature, skin eruption, etc., are danger signals of interest to the physician and public health nurse. The child may "out-grow" these difficulties as he may weather successive "bad colds" and survive badly infected tonsils, but nevertheless these incipient personality disorders have to be seriously considered as the possible beginning of disease trends which in an alarming proportion of our population find later expression as problems taxing the united resources of health agencies, social welfare organizations, state hospitals, reformatories and penitentiaries. The germs of mental and behavior disorders, when viewed under a microscope, are seldom the bacteria we associate with physical disease but reside in the maladjustment between the individual as an organism and the experience and treatment he is given at home, in school and in the world at large.

Various phases of the general health movement, of progressive education, of experimental psychology, and of social effort to prevent mental and behavior disorders, have wound up with a new emphasis on childhood as the proper period for the preventive utilization of what we have learned in these fields. On the whole, however, workers in these separate fields have practiced in isolation from one another, emphasizing the enormous importance of the special problem they see but failing to realize that a solution of that problem depends very largely on the success with which the problems of the other fields are being met. That is why the child guidance clinic speaks of understanding the "whole" child. The attempt to do so is costly, for it involves exploring his entire universe, and this calls for the assistance of

the physician, the psychologist and the social worker. Probably it would not be worth while if we did not also attempt to convey what we know of the child's whole life to those who deal with each fraction of it so that they can see their own problem more clearly, work together with the rest of the community in a coordinated way and formulate new methods in the light of better understanding of the material with which they are working. Clinics for problem children are agencies for recognizing and treating early manifestations of behavior and mental disorders. In addition they offer the greatest opportunity for educational work in preventing the development of problem children and also have to offer the average healthy child the greatest opportunity for a happy and satisfying adult life.

Many of the roots and remedies for psychiatric problems in both children and adults are in other than medical fields, and it is this fact which helps to make it so difficult for the general medical man to see these problems as related to medicine. Psychiatry does not deal with a separate compartment of the individual's life but with all the forces which operate to make that life what it is. The individual, at whatever age or under whatever conditions we see him, is, at the moment, the product of all that has gone before. This includes not merely the past history of his organ systems and the possibility of present diseased organs, but also the individual who owns those organs—the living functioning organism as a whole—his heredity, his early growth and development, his training and experiences, social relationships, intellectual equipment, personality, and his usual methods of responding to life's situations and demands. We cannot take over all those fields related to the individual's life, but we should be ready to understand enough of their philosophy and working methods to make possible common thinking. This is not necessarily work for the individual psychiatrist to undertake but should be a part of the working philosophy of the medical profession. It might be recalled that Hippocrates once said—"We cannot understand the body without a knowledge of the whole of things"—. There is an undoubted necessity for treating individual cases of yellow fever, but we cannot rest content with achievement on this scale and overlook the necessity for eradicating the mosquito. The sources of social maladjustments are not entirely in the control of medicine itself, and if medicine is to be preventive it must penetrate into those fields that are a part of the normal life of every individual.

The realization of the importance of mental health to the welfare of the individual and the community has grown at a rapid pace as a result of the experiences of the past two decades, and yet, even today, the far reaching importance of this factor is but vaguely appreciated and to many people the term arouses little more than thoughts of insanity and feeble-mindedness. These two varieties of mental ill-health, although striking and more or less obvious, are but a fraction of the real problem. Campbell well expressed the scope of mental factors in relation to illness when he said that, "A headache indicates a mental disorder if it comes because one is dodging something disagreeable. A pain in the back is a mental disorder if its persistence is due to discouragement and a feeling of uncertainty and a desire to have sick benefit, rather than to put one's back into one's work. Sleeplessness is a mental disorder if its basis lies in personal worries and emotional tangles.—Discontent with one's environment may be a mental disorder, if its cause lies, not in some external situation, but in personal failure to deal with one's emotional problems. Suspicion, distrust, misinterpretation, are mental disorders when they are disguised expression of repressed longings, into which the patient has no clear insight. Stealing sometimes indicates a mental disorder, the odd expression of underlying conflicts in the patient's nature. The feeling of fatigue sometimes represents, not overwork, but discouragement, in ability to meet situations, lack of interest in the opportunities available. Unsociability, marital incompatibility, alcoholism, an aggressive and embittered social attitude, may all indicate a disorder of the mental balance, which may be open to modification—".

There has been a tendency in the past to think of mental hygiene in terms of a separate scientific entity, distinct from general hygiene. This attitude is, of course, absurd. It would perhaps be better to look upon mental hygiene as the initial and essential step toward general hygiene; certainly it is the pivot around which all motions of hygiene revolve. It is essential to understand and carry out the principles of

mental hygiene in order to develop the kind of mind that will be receptive to the dictates of general hygienic principles. Dr. George E. Vincent, while President of the Rockefeller Foundation, during a public lecture said that, "A very significant and important thing to remember is that the various hygienes, the control of communicable disease and the sanitation of the environment are all part of one movement. The idea that you can touch any of them—that you can deal or dwell on one to the exclusion of the others—the idea that you can develop any one of them very far until you have developed the others is one of the great fallacies—and what is termed mental hygiene permeates all the other hygienes."

Mental hygiene is not merely concerned with the prevention of behavior and mental disorders and related phases of mental life; it is also interested in the preservation or conservation of mental health. Hygeia to the ancient Greeks was a goddess who personified health; hygiene today is a word used in exactly the same way. It is important to realize, however, that health is not merely absence of disease; it is a definite and positive possession. A knife may be free from rust or serious defect and yet not sharp. It will serve after a fashion and may last long, but it will not be efficient. Mental health not only means absence of mental disease or defect, but is the cutting edge that makes the best use of the abilities with which man is endowed. To gain this edge, it is necessary to build up habits that will bring happiness to the individual as well as render him an efficient member of society. Mental hygiene deals with the meaning of and the manner of learning such habits which are rendered necessary by the fact that men live in a social group.

Today mental hygiene denotes a wide field of practical effort in dealing with humanity's most difficult tasks. A general realization is coming into existence that mental factors underlie not only inability to make a living, the gross disorders of conduct and mental disease, but all the social activities of man. Today we realize that human behavior can be neither successfully nor effectively directed without taking into account the facts of mental life. On every hand are to be found practical illustrations of the application of knowledge of the mechanisms of the mind to the affairs of the individual and of society. New information in this field of knowledge no longer benefits only the mentally sick. In the home, school, children's and other courts, colleges and universities, the factory, the hospital, the prison—in short, wherever intelligent attempts are being made to direct human activities,—there will be found in many instances, patiently at work, those whose task in life is the study of mental activities in health and in disease. Much of such work is tentative, many issues remain to be solved, most of it is yet carried on with slender means and meagre equipment, but it represents man's earnest enterprise—that of facing squarely the issues raised by his own mental inadequacies and deviations and dealing with them upon the level in which they originated. It is not unusual with the popularization of a new subject that many fads and fancies arise. Psychiatry and mental hygiene have had their share.

The future program of the National Committee for Mental Hygiene, as it has been recently and briefly formulated, includes the following activities: promotion of psychiatric and mental hygiene research; improvment of medical education with regard to mental hygiene anl psychiatry; integration of mental hygiene principles into the practices of education, social work, nursing, religion, public health and industry; securing a more effective working relationship between law and psychiatry in dealing with the problems of delinquency; improvement of facilities for the treatment and control of those suffering from mental disabilities, and strengthening mental hygiene clinic organization. Emphasis is being placed on the training of personnel because the demand for suitable workers far exceeds the supply. The Committee is attempting to cooperate with those in charge of medical education so that every student on graduation will appreciate the significance of personality and environmental factors in connection with medical cases. It is also attempting to marshal those forces that can contribute to the conservation of mental health. There is required in this regard the whole-hearted, intelligent cooperation of the medical profession.

It is evident that the general medical practitioner has much in common with psychiatry and mental hygiene. The general practitioner should, and the psychiatrist does, deal with the individual as a whole. The general practitioner of the past generation was the family advisor and community consultant. He knew

the community and its families, their troubles and their needs; he knew the family units and the individual members of those groups; they came to him when ill and when in grief; parents sent their adolescent youngsters to him for advice, and blushing young brides made him their confidant. All things considered, he undoubtedly knew more about the total individual and his entire environment than many general practitioners and specialists claim to know today. He was a great deal of a psychiatrist and a first-class mental hygienist, considering his stock in hand.

It seems obvious that the general practitioner of medicine should be a leader in the front ranks of those interested in promoting mental health. Families and individuals continue to have the same problems as they did years ago. The general practitioner is usually the first one to contact these early disorders, and therefore the burden of mental hygiene, sooner or later, will rest on his shoulders. With the fullest development of education and training facilities in psychiatry it is most doubtful if psychiatrists alone, for generations to come, if ever, will be able to cope with the entire mental health problem. Such patient material as the psychiatrist handles, in private and clinic practice, is often of long duration and usually has passed through the hands of general practitioners and specialists. The general medical profession tends to rationalize its situation in relation to psychiatry by saying, "Well, you don't seem to be able to do much for these cases," meaning psychiatric patients, and one might well reply that one doesn't ordinarily wait until the patient's foot or appendix is gangrenous before asking the advice of the surgeon; then there is the old out-cry about psychiatric terminology, which, after all, is perhaps no more difficult than the terminology of ophthalmology or dermatology, and, finally, there are those who have a sort of phobia toward things "mental" and who admit their deficiency in this field and claim its study is impossible in a post-graduate way. There are, of course, opportunities for those interested to learn about mental hygiene and psychiatry and to regain that setting and relationship of the practitioner of another day.

Many intelligent patients dodge behind the term "nervous breakdown" rather than frankly face the real mental issues in their situation, and it might be said that they are often encouraged in this by the attending physician; they choose the "healing" and "sciences" in their churches rather than the continued treatment in the physician's office, where they are frequently not understood; patent medicines and "cure all" drugs and machines flourish largely through the understanding psychology of their promoters; spiritualism, Coueism, Eddyism and other "isms," prevail from time to time, or are constantly with us for the emotional choice and satisfaction of those mentally ill. We must recognize the fact that people are subject to mental illnesses of various kinds and degrees and that they seek help, usually first from physicians, but drugs and surgery are not always the only therapeutic aids. Until the medical profession is more proficient in mental medicine there will undoubtedly be quacks and charlatans in increasing numbers, and the profession will continue its blind struggle against these foes. Certainly a profession which has overcome the plague and other horrible diseases can be depended upon to assist with the removal of the principal barrier against the acceptance of mental disease in the public mind.

Psychiatry has made progress in the general medical field during the last decade or so but this progress has been more than paralleled by the interest of non-medical groups. This non-medical development should greatly interest the medical profession. It is highly necessary that the general practitioner enter consciously and confidently the field of mental hygiene. Teachers in the other branches of medicine, by displaying a more favorable attitude toward nervous and mental diseases, can influence medical students, the future practitioners of medicine, in relation to a more healthy regard for mental hygiene and psychiatry. The general medical profession, instead of considering psychiatry as a limited specialty, should realize that the brain and nervous system integrate all other bodily systems and, therefore, play a part in every organic disease and its treatment. The neuroses, acute and chronic organic diseases complicated by psychiatric problems, the mental aspects of convalescence, habit and personality disorders of problem children, and the smaller number of psychotic disorders, represent a larger part of the general practitioner's practice than he at present realizes.

Since the psychiatrist, like any other special-

ist, is prone to become over-enthusiastic about his own field, the views of others might be significant in showing the trend of thought toward psychiatry and mental hygiene. During the past year, the Secretary of the Interior, Dr. Ray Lyman Wilbur, among others things, said. "—The profession of medicine has been so engrossed in its marvelous successes in the application of biology, physics, and chemistry to the protection and treatment of human beings that it has paid little attention to the psychiatry and mental side of patients. Certain experts have developed more or less by chance, but deliberate preparation of the medical profession in psychiatry has been in this country for the most part, and in other countries as well, of a distinctly inferior character.—"

Dr. James S. McLester, discussing "The Teaching of Therapeutics," said, "In one important particular present methods are woefully at fault. We still teach the student largely to treat the disease. We should teach him to treat the patient. It seems trite to say that it is not sufficient merely to label the patient, and after placing him in the proper category, to prescribe the treatment standardized for that category, but this will bear repetition. The patient must be envisaged as a person with all sorts of traits and tendencies, constitutional and acquired, plus a disease which in itself is apt to be extremely variable. If treatment is to attain its highest degree of success, all of this must be taken into consideration. True, the student is already learning to look at the patient with a large degree of sympathy and a better understanding, and to study him as well as his disease, but he must learn also to plan his treatment with the same attitude of mind. We are apt to deride psychotherapy because it has sometimes been pushed to ridiculous extremes, but the longer I study ailing humanity the more do I become convinced of the genuine influence of emotional and psychic factors upon the course of disease." Dr. Musser, discussing McLester's paper, said, "After all, the great bulk of medical practice is made up of individuals who do not have a disease to which a definite specific name can be given. Perhaps a third of all the cases of the average medical practitioner is made up of persons who have a functional gastric disturbance."

Your leader and spokesman, your president, Dr. Hodges, in a recent message said, "This is probably one of the most dominant subjects before the profession at this time, and it is almost inexplicable that it has not earlier aroused the attention, and energized the activities of the profession . . . It is not usually known, but (quoting another authority) it is a fact that the family physician is more often consulted for mental and functional disorders than for all other ailments combined. Psychiatry is no longer 'the step-sister of medicine,' but a respected member of the family of the medical arts and sciences, . . ."

With these last words in mind one cannot help but entertain the notion that this medical body will live up to the traditions of its predecessors, who instituted the first building program for the insane in this country, by interesting and familiarizing itself in regard to the recent trends in psychiatry and mental hygiene, and, therefore, intelligently support and sustain a campaign for mental health in Virginia. Such action seems most appropriate when one considers your modern medical leaders in the field of psychiatric thought under the able leadership of Dr. Drewry.

Selected References

Hart, Bernard: Psychology of Insanity. Macmillan Co., N. Y.

Beers, Clifford W.: A Mind that Found Itself. Doubleday, Doran Co., N. Y.

Truitt, Ralph P.: Community Child Guidance Clinics. Commonwealth Fund Publication, N. Y. 1928.

Davies, Stanley P.: Mental Hygiene and Social Progress. *Mental Hygiene*, Vol. XIII, No. 2, April, 1929.

Campbell, C. Macfie: Mental Hygiene in Industry. *Mental Hygiene*, Vol. V, No. 3, July, 1921.

Southard, E. E.: The Range of the General Practitioner in Psychiatric Diagnosis. Pamphlet distributed by National Committee for Mental Hygiene.

Riggs, Austen Fox: The Relation of Psychiatry to Medicine. *Annals of Medicine*, October, 1929.

Strecker, Edward A.: Psychiatric Education. American Foundation for Mental Hygiene (Pamphlet), 1930.

Wilbur, Ray Lyman: Mental Health as a National Problem. *Mental Hygiene*, Vol. XV, No. 3, July, 1931.

McLester, James S.: The Teaching of Therapeutics. *So. Medical Journal*, Vol. XXIV, No. 9, September, 1931.

Hodges, J. Allison: Message of the President of the Medical Soociety of Virginia, *Va. Medical Monthly*, July, 1931.

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MENTAL HYGIENE SURVEY OF THE STATE OF VIRGINIA.*

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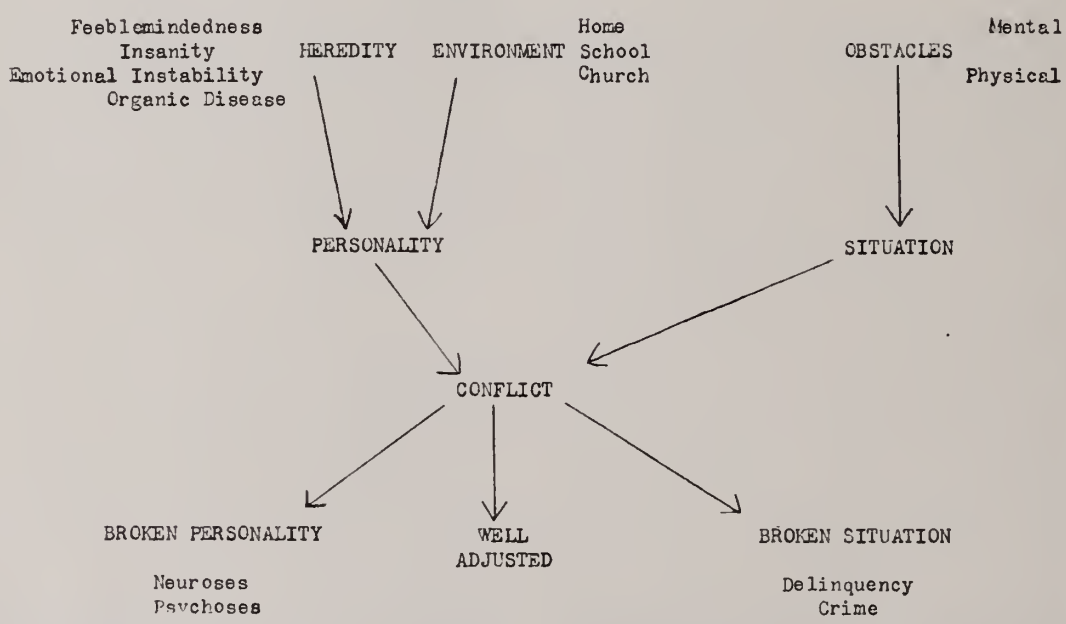
Mental hygiene is defined as the science and practice of the preservation of mental health. It, therefore, leads to the study of the theories and to the practical application of eugenics; to the adjusting of the inborn capacities and endowments to the environment; and, finally, to the prevention and cure of mental disease. This is so large a program that the mental hygiene surveys usually attempted only try to show "what instances of social maladjustment sufficiently marked to have become the concern of public authorities, are, upon investigation, to be attributed mainly or in a large measure to mental disorders."[1] Numerous surveys conducted in this country indicate that 1 per cent of the population needs segregation and that about 2 per cent in addition require special supervision and care outside of institutions.[3] In Virginia this would place 25,000 in institutions and additional 50,000 under special care. It is interesting to note that last year there were approximately 13,000 patients in hospitals in Virginia because of mental disease and over 50,000 in jails and penitentiaries.[4]

In order to convey the need for active work in this field, however, an effort will be made to give a cross section of the situation in Virginia. To organize this picture, to make it concrete and so that it will direct toward definite lines of action a simple diagram has been attempted illustrating the forces in the inherited background that we know something about; the factors in the environment of the child which prepare it to meet the conflict of life as it tries to adjust itself to situations arising within and without its personality; and, finally, depicting the result in a well adjusted individual or maladjusted one, leading either to mental disease or to an abnormal and unsocial revolt.

TABLE NO. I



In this study it has been necessary to omit a detailed presentation of the two factors, organic disease and gross constitutional defect, as the importance of these elements is well understood and their great importance often presented. There are a few data of significance along this line, however, which should be given.[5]

TABLE NO. 2

Per cent of 1,228 white insane (first admissions) who showed positive Wassermann	4.4
Per cent of 1,168 first admissions to state penitentiary who showed positive Wassermann	16.1
Infant mortality rate in Virginia	Tenth highest in United States
Death rate in Virginia	Sixteenth in United States

*Read as part of the Symposium on Mental Hygiene before the Medical Society of Virginia at its sixty-second annual meeting, in Roanoke, October 6-8, 1931.

This table indicates that syphilis perhaps played a minor role in definite mental disease but is certainly a factor in delinquency. The factors that produce such a high infant mortality must also initiate many handicapped children into life. It is stated by Rosanoff that "at least three-fourths of all cases of mental disorders occur on a basis of bad heredity, alcoholism, drug addiction or syphilis; an individual who is of normal ancestry and abstains from alcoholism and drugs and remains free from syphilis is not seriously threatened with mental disorder."[1] Yet how few have absolutely normal inheritance and certainly in many cases mental disease causes alcoholism and drug addiction. Certainly organic disease and drugs are tremendous factors. The physicians of the state and the State Board of Health are doing much to prevent mental disease while curing organic disorders.

However, it behooves us to consider two other great forces affecting the unborn child. The first of these is the feebleminded situation[4]:

Table No. 3

The Feebleminded Situation in State Institutions

Number feebleminded in Lynchburg	554
Number feebleminded at Petersburg	75
Number feebleminded at penitentiary (committed during last year)	535
Number feebleminded in Gundry Home	78
Number feebleminded at University of Virginia Child Guidance Clinic and Hospital	53
Number feebleminded in State Mental Hygiene Clinic	457
Total	1,752
Number of epileptics at Lynchburg (Colony)	409
Estimated number of feebleminded for United States	2,000,000
Estimated number of feebleminded for Virginia	50,000
Estimated number of feebleminded for Virginia that should be segregated	2,500-5,000

There are said to be 40.000 to 60,000 feebleminded in Massachusetts.[3] A recent survey in California indicated that 2 per cent of the population were feebleminded in the United States[1] while it is known that 400,000 children do not get on in the public schools.[3] There are probably 50,000 feebleminded in Virginia because of its negro population and the number of isolated rural districts. It seems, on the other hand, correct, as Fernald holds, that only 5 to 10 per cent of feebleminded need to be institutionalized, thus in this state there are only 2.500 to 5,000 to be segregated and colonized.[3] The above table shows the number of feebleminded at the Colony not counting the epileptic, but if the latter are included there are 963 patients at this institution, so that practically 2,000 of the state's feebleminded were under observation last year and at least one-half of these are segregated in some way. They, however, are not ones that need mental hygiene as their very seriousness isolates them, but it is the great remainder, 48,000 cluttering our jails, retarding our schools and presenting thousands of illegitimate children to us for care. Special classes in all the schools of the state for this class of individuals is now the crying need, although the major psychoses along with the feebleminded must be and are being eliminated as inheritance factors by judicious sterilization and segregation. The elimination of emotional instabilities and neurotic constitution in parents, the last great factor in inheritance, while an aim of the mental hygiene movement, must be left to the coming generations as it is so widespread that its ramifications are very complicated and the determination of its influence is beyond the scope of the paper. The element is mentioned because in the control of this factor in the parents is contained the hope for the happier and more useful children of the future.

After birth the child is exposed to a fixed environment for the first five to ten years in the majority of cases composed of three major influences, the home, the school, and the church. At this point, then, as the developing personality is pursued, it is necessary to consider Virginia's standing in this regard.

Table No. 4

Home and Family

Virginia ranks fifth in ownership of homes, with 41.6 free of indebtedness.	
Homes occupied by owners	51.1%
Dwellings	450,229
Families	483,363
Number of cases in private child-caring organizations	6,332
Number illegitimate births, 1929-1930	3,380

The records of 1926[8] show that Virginia ranks fifth in the United States in ownership of homes with 41.6 per cent owned free of indebtedness and 51.1 per cent occupied by owners, while there are 483,363 families with an average of four to a family.[15] In other words 1,933,452 Virginians out of a possible 2,500,000 live a family life and still more for 483,363 families there are 450,229 separate dwellings, showing that the large majority of our people live in the home. This is a splendid record

and denotes a great source of strength while on the other hand it emphasizes the need for the understanding of intra-familial conflicts, the cause of many maladjustments. It also should be inserted here that in spite of the numerous families the private child caring institutions of the state handled 6,332 children last year[4] and 3,380 illegitimate children were born.[5]

TABLE No. 5
DIVORCE

Divorce rate per 1,000 in 1922:	
United States	1.35
Virginia	1.04
Divorce rate per 1,000 in 1928:	
United States	1.63
Virginia	1.23
Marriage rate per 1,000 in 1929:	
United States	10
Virginia	9.98

The number of marriages in Virginia decreased slightly last year, while the divorce rate increased, but is still much less than the rate of the country as a whole. Still it is impressive to realize that there were 13,566 divorced persons living in the state last year.[5]

TABLE No. 6
CHURCH, HOME, FAMILY

Virginia stood sixth in 1926 in church membership, with 61.9%[8] of her population over ten years of age.
There was an increase of 23.5% in ten years.
Number of population not belonging to church-107,097

Virginia stands sixth in church membership with 61.9 per cent of her population over ten years of age as church members, 172,363 people, an increase of 23.5 per cent in ten years.[13] The home and the church seem to be in excellent shape, especially when compared with other states and other times. The school system of Virginia, the third influence under consideration, also is progressing. Nevertheless, the table shows that there are many points of interest.[9]

TABLE No. 7
SCHOOLS

Number enrolled in Public Schools	554,512
Number school attendants	452,567
Number not in any school	100,000
Per cent enrolled in schools of Virginia	77.4
Per cent enrolled in schools in United States	83.6
Number students in Virginia failing in 1930	35,836
Number students in Virginia dropped in 1930	20,231
Number of school buildings	5,618
Number of "one teacher schools"	2,765
Number of "one and two teacher schools" closed	167
Per capita expenditure for education in United States in 1924	$21.00
Per capita expenditure for education in Virginia in 1924	12.47

There are 100,000 children not in any school, and the percentage enrolled is below that of the general figure for the United States. This is explained in part by the fact that the per capita expenditure for schools in the nation is $21.00 while in Virginia it is $12.47. Still approximately 50 per cent of our schools are one teacher schools. It would, also, be interesting to know why 20,231 students dropped out of school last year while 35,836 failed. Yet the most important consideration from a mental hygiene standpoint is that there are few if any special classes for retarded students and that the prevention of maladjusted personalities has no definite part in the plans of the department of public instruction. Let us add one more point to the five point standard for health among school children and include a good adjustment as one of the criteria.

TABLE No. 8
ILLITERACY

Year	No. Illiterates	Per cent in Virginia	Per cent United States
Native White 1930	65,482	4.8	1.5
Colored 1930	95,184	19 2	16.3
Total 1930	160,666	8.7	4.3

Connected closely with our schools the problem of illiteracy appears.[8] The negro illiteracy has made a drop every year, while that of the rural native white brings our percentage to twice the national native white percentage, emphasizing the point made by Wilson Gee[10] that the more capable citizens are leaving the rural districts, thus making illiteracy almost a rural problem, throwing more strain on the county and the rural physician. One hundred sixty thousand, six hundred sixty-six people unable to read must have considerable influence on the mental health of our state.

Let us now consider the 55,000 children who are being born in Virginia this year as one enormous personality and recapitulate the factors that we know will influence it as it develops through the decades of life. One hundred thousand individuals that have never been to school, 160,666 illiterates, 50,000 more or less feebleminded, 10,000 pre-psychotics that will be in institutions for mental disease by the time the individual is ten years old, 107,000 people who do not belong to a church, 48,000 possible fathers and mothers who acquired a court record this year, and 9,000

others who this year went through the juvenile courts. 1,000 new admissions to the penitentiary who sooner or later will enter civil life once more, are all to exert their influence. Shall this personality break, shall it adjust; how many of its individual units will be leading happy, useful lives at the age of forty is the problem of mental hygiene. This 53,000 have to be toughened and prepared for strains of the pre-school period, which are mostly those of the home, then of the school period, next the age of adolescence with endocrin changes, and, finally for those of adult life. It is the aim of mental hygiene to bring them to this point as well-adjusted and useful citizens but the way is difficult, the going hard and is it any wonder that one in twenty-six enters the doors of the state hospital by the age of twenty-five?[11] In the Preliminary Reports of the White House Conference on Child Health and Protection it was stated that, "In early childhood, even as early as four years of age, about one-third of apparently normal children of self-sustaining families, average in intelligence, have behavior problems sufficient to necessitate treatment."[12] We have considered only the grossly abnormal but suppose we add this one-third of normal children and what a problem we will have.

In the above diagram, in a rather dramatic way, is indicated the manner in which the personality of the individual meets the obstacles of life. The greatest number adjust fairly satisfactorily and go on to help carry their share of burdens, but many fail, either by the ruination of their own personalities or by anti-social and unethical conduct; also it is true that broken personalities are the cause of broken situations more often than the broken situations cause the personality to crumble. The ruptures of the personality can be divided into the psychoses and the psychoneuroses, the major and minor mental disorders. The former are treated well in this state by competent segregation, occupation, sterilization and parole, yet the burden of their care increases.[4]

Table No. 9

Psychoses

Southwestern Hospital	1,133
Western Hospital	2,993
Eastern Hospital	1,179
Central Hospital	2,794
University Hospital	90
Private Hospitals	300
Physicians	1,140
Total	9,629

Number of inmates of Mental Hospitals in U. S (during year 1929-1930)	300,000
First admissions at Mental Hospitals in U. S. (1929-1930)	70,000
First admissions in Virginia State Hospitals (1929-1930)	1,696
Rate per thousand of total population in Virginia State Hospitals	63
Rate per thousand of total population in New York State Hospitals	73

The psychoneuroses are a tremendous problem; they undoubtedly produce as many invalids as any other disease. To obtain statistics on their frequency a survey was attempted of the physicians and hospitals of the state as shown in the next table.

Table No. 10

Number physicians written to	2,305
Number replies received	227
Number reporting treatment of mental cases	106
Number psychoneuroses reported treated, 1930-31	1,550
Number hospitals written to	118
Number replies received	40
Number general hospitals treating psychoneuroses	12
Number psychoneuroses treated 1930-31	1,728
Estimate for Virginia	
Number physicians treating psychoneuroses (50% of 2,305)	1,100
Average number of cases per physician last year	10
Number of such cases treated last year	11,000

Two thousand three hundred and five questionnaires were sent throughout the state, 227 replies were returned, 112 of these did not treat this type of disorder, while 105 gave exact statistics; this number treated 1,550 psychoneuroses during the year, an average of over ten for each physician. From this it seems logical to surmise that 50 per cent or 1,200 of our physicians throughout the state treat psychoneurotics and that last year they averaged ten of these cases each making a total estimate of 10,000 psychoneurotics that needed a doctor's care last year. Letters were written to 118 hospitals asking for the number of such cases handled. Forty replied, only twelve general hospitals were found to admit psychoneurotics, but this small number reported 1,728 cases. The great difficulty, of course, with psychoneurotic statistics is that these people so frequently have other diseases. The amount of pain and suffering as well as the monetary loss caused by the emotionally unstable, borderline mental and mild forms of the major psychoses must be tremendous as their illness is usually long, continued, and tends to recur. It is believed by many workers in this field

that this suffering can be prevented to a large extent by proper guidance in childhood.

But there is yet another large realm where the maladjusted personality attempts to escape reality and to do so breaks through the encircling environment.

TABLE No. 11
JUVENILE SITUATION

Number children handled in Juvenile Courts (1929-30)	9,854
Delinquents (84%)	8,277
Committed to Childrens' Bureau	3,118
Private Child Caring Institutions	6,332
Penitentiary (under 20)	532
Jails (Juvenile)	2,712
Studied at State Mental Hygiene Clinic	761
Richmond Memorial Clinic	1,351
Studied at University of Va. Child Guidance Clinic	72
Studied at Lynchburg Child Guidance Clinic	121

Table No. 11 shows the juvenile situation in the state as 9,854 children went through the juvenile courts; of these 8,277 were delinquents; 3,118 were committed to the Childrens' Bureau.[4] There were 1,523 in the state industrial schools, 532 prisoners under twenty in the state penitentiary, and 2,712 juveniles in the jails. Certainly something can be done to prevent this onslaught of anti-social individuals. The boy in the court and jail usually points back at the home. Many studies have been made on the mental condition of prisoners in jails, penitentiaries and on juvenile offenders, all showing a large percentage of mental abnormality to be present among such persons. Apparently the percentage of abnormal mentality is about 50 per cent for first offenders and among repeaters or recidivits almost 90 per cent.[11, 12, 13] The jails of the state then are teeming with psychiatric material. The new admissions to the jails last year were 48,082. In the penitentiary 1,162 reported. In the latter place a splendid psychiatric study was made, results of which are shown in the following table[14]:

TABLE No. 12
CRIME SITUATION
New Admissions

Jails	48,082
(50% of these abnormal mentally)	
(90% of recidivists abnormal mentally)	
Farm and Convict Camp	4,027
Industrial schools for juvenile delinquents	1,040
Detention homes and boarding homes for State wards	1,000
Childrens' Bureau	3,118
Ivakota Farms, for female delinquents	80
Report of Penitentiary	
Penitentiary	1,162
Recidivist	130
1. Normal	41.48%
2. Feebleminded	46.07%
3. Neuropathic:	
a. Psychopathic personality	0.96
b. Epileptic	0.18
c. Drug Addict	0 88
d. Alcoholic	6.04
e. Psychoneurotic	1.74
f. Other brain or nervous abnormalities without psychoses	2 58
g. Endocrine	0.12

In conclusion what are the agencies that are attempting to meet this problem?

TABLE No. 13
WORKERS IN MENTAL HYGIENE

Number of counties with juvenile judges	97
Number of cities and towns with juvenile judges	24
Number of superintendents of Public Welfare	14
Number of probation officers, volunteers, etc.	93
Number of Child Guidance Clinics	4
Number of population per M. D.	995

There are juvenile court judges in ninety-seven counties and twenty-four towns, few of whom have any psychiatric training and still fewer that can obtain any trained help in investigating and studying their cases.[4] Next are the superintendents of public welfare doing great work but in sad need of investigators and above all trained medical advice. The doctor with his training and with a little added interest can supply a tremendous need of this department. Then there are the four child guidance clinics of the state, the Richmond Memorial Clinic which handled 1,351 cases last year, the State Mental Hygiene Clinic which studied 761, the University of Virginia Child Guidance Clinic which took care of seventy-two, while a similar clinic in Lynchburg handled 121. Undoubtedly more clinics must be organized as these are inadequate to meet the demand. The overworked Department of Public Instruction made two surveys of the mental ability of a large number of the pupils but so far has been unable to do very much with the statistics collected. They are doing well in organic health, but in mental health are equipped to do very little. The Department of Health does not consider mental disease or personality disorders as sickness to be considered. There is a great mass of work here to be done which needs the attention of trained men and no one can supply this need better than the physician. It may be true that each third child manifests a behavior problem in need of treatment[12] yet certainly in this state, with its many homes, the

psychiatrist and the trained psychiatric social worker are not the first to be called, but the work must be done by interested parents, by the understanding teacher, and the physician who with his training, his insight, and his appreciation of the seriousness of the early beginnings of maladjustment, can correct them at their source. There is one physician to every 995 people in Virginia, so they must have outside help, but their sympathy, their understanding and their leadership is vital.

References

1. Manual of Psychiatry, by A. J. Rosanoff, M. D., New York: John Wiley and Sons, 1927. pp. 682, 465, 437, 450.
3. Practical Clinical Psychiatry, by Edward A. Strecker and Franklin G. Ebaugh. Philadelphia: P. Blakiston's Son and Co., Inc., pp. 433, 430.
9. Annual Report of the Supt. of Public Instruction of the Commonwealth of Virginia. School year 1929-1930. pp. 165, 86.
12. *Mental Hygiene Bulletin*, Vol. LX, Nos. 1 and 2, January and February, 1931. p. 5.
10. Qualitative Selection in City-ward Migration, by Wilson Gee and Dewees Runk. *Am. Journal of Sociology*, Vol. XXXVII, No. 2, September, 1931.
8. The University of Virginia News Letter, University, Virginia.
   Vol. VII, No. 2, October 15, 1930.
   Vol. VII, No. 1, October 1, 1931.
   Vol. I, No. 11, June 1, 1925.
   Vol. VII, No. 12, March 15, 1931.
   Vol. VII. No. 14, April 15, 1931.
11. Adolescence, Studies in Mental Hygiene, by Frankwood E. Williams, M. D. New York: Farrar & Rhinehart. pp. 209, 222.
12. Study of 608 Admissions to Sing Sing Prison, by Bernard Gluck. *Mental Hygiene*. Vol. II, No. 1, January, 1918. p. 85.
13. Report of a Mental Hygiene Survey of New York County Jails and Penitentiaries, Conducted by the National Committee for Mental Hygiene, by Frankwood E. Williams and V. V. Anderson, M. D. New York: The National Committee for Mental Hygiene, 1924. p. 148.
16. The Human Mind, by Karl A. Menninger and Alfred A. Knoff, 1930. p. 148.
14. Annual Report of Board of Directors of the Penitentiary. For the Fiscal Year Ending June 30, 1930. p. 13.
15. A Statistical Study of Virginia, Institute Monograph No. 1, by Wilson Gee and John J. Corson, 3rd. Published by the Institute for Research in the Social Sciences, University of Virginia, December, 1927.
4. Twenty-first Annual Report of the Department of Public Welfare of Virginia for the year ending June 30, 1930. pp. 16, 19, 20, 21, 146, 147.
5. Annual Report of the State Department of Health and the State Health Commissioner to the Governor of Virginia. For the Year Ending June 30, 1930. pp. 132, 113, 15.

PRESENT ACTIVITIES FOR THE PREVENTION OF MENTAL DISORDERS IN VIRGINIA.*

By WILLIAM F. DREWRY, M. D., Richmond, Va.

Director, Bureau of Mental Hygiene, State Department of Public Welfare.

Present activities for the prevention of mental disorders in this state are being directed towards acquiring and disseminating information for the profession and the public. Conducting and fostering mental clinics for children and adults is awakening new interest in mental health. Mental disorders and their consequences have such serious social, medical and economic significance that it is of vital importance that every possible extra-institutional effort be made for prevention, early recognition and effective treatment. This should supplement the curative measures undertaken by the mental hospitals and the individual psychiatrists and other physicians.

Starting With the Child. Nelson Antrim Crawford, a scientific student of child welfare, says in "The Healthy Minded Child" that "Every act of misbehavior in a child is a mental problem, and success in solving it is not determined by the immediate apparent results, but by the ends to which it may lead in ten or fifteen or twenty-five years. A large proportion of neurotics and otherwise unhappy persons today are such because of unwise practice of their parents and teachers. Unless we get rid of such methods, that is, dealing with the child without understanding its individual make-up and needs, we shall still have the vast economic and social waste produced by mental difficulties of adults."

Mental Hygiene Clinics. The Children's Memorial Clinic in Richmond, which studies habit, emotional and behavior disorders in school and pre-school children and also in a limited number of boys and girls referred by the local juvenile court, renders approved service as a child guidance clinic. Like every other fully equipped clinic of its kind, it has a personnel of technically trained psychiatrists, psychiatric social workers, psychologists, a pediatrician and a laboratory technician. During the past year it studied and directed treatment for 1,352 cases. A child guidance clinic is also in operation in Lynchburg in connection with the local health department. There

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is also one at the University of Virginia in connection with the medical department. The total number of cases for the past year in these two clinics was two hundred.

The State Mental Hygiene Clinic in Richmond, operated under the auspices of the Bureau of Mental Hygiene of the State Department of Public Welfare, has undertaken a service that promises much good. Mobile clinics in Roanoke, Danville and Norfolk have been temporarily discontinued for financial reasons. The 2,000 patients studied since 1928 —761 during the past year—were chiefly children and young people under eighteen years of age, referred by physicians, social welfare organizations, children's institutions, parents, teachers, schools, health officers and nurses, or committed by juvenile courts. There were a few adults whose sanity was questioned by the courts. No patient is received for study until he has been physically examined and approved for clinic study by a physician, except those committed or referred by the courts.

Each Child Studied. The study of each individual consists of a social history, physical examination, laboratory tests, intelligence measurements, and a psychiatric examination embracing his attitude towards others and himself, especially in respect to his conflicts and difficulties, the family interrelationship, his personality traits, outlook upon life, and any symptoms suggestive of an existing or latent mental disorder. The clinic staff makes an analysis of the social and personal history and the findings of the several examinations—in fact, considers the *whole patient*,—and based upon these, advises the treatment plan. Nearly 50 per cent of the patients were definitely feeble-minded, but comparatively few could be promptly received in either colony because of insufficient room. All the state patients that were not committed to some appropriate state institution were placed in foster homes and kept under the visitorial supervision of the Children's Bureau of the Department of Public Welfare. Those needing further psychiatric study were re-examined by the State mental clinic. There are at this time about 2,400 children and young people less than twenty-one years old under personal supervision of the department.

For special examination, and for medical and surgical treatment, the patients sent from the juvenile courts are referred to the out-patient clinics and hospital services of the Medical College of Virginia, and for treatment of venereal diseases to a local hospital. Patients that do not come through the courts are referred to their personal physicians with recommendations.

Some of the doubtful cases are, upon request of the director of the Bureau, received without formal commitment in one of the state hospitals, and a few in private institutions, for observation, study and treatment. This experience has demonstrated the need of a separate institution, apart from adult patients, for the care, study and treatment of children and adolescents having nervous or mental diseases.

A case report of a case will illustrate the procedure of the clinic and some of the problems with which it deals.

Frank, a white boy, 10 years old, always lived in the country, was committed to the Department of Public Welfare by a juvenile court for incorrigibility, larceny, etc. His father died of tuberculosis when patient was six; brother in tuberculosis sanatorium. Family dependent but respectable. Patient placed with an aunt and uncle who were unkind to him and denied him a boy's usual pleasures. There was antagonism between him and a teacher. He ran away from home and school, took to stealing, housebreaking and lying. Among the objects he stole were two pistols with which he armed himself probably as an anticipated defense measure. Marked emotional disturbances. He was placed temporarily in jail.

At the clinic he was restless, meddlesome, talkative, threatening, imaginative; continued several days emotionally upset, his mental conditions being essentially that of sub-acute mania. As soon as practicable, an intelligence test was given which showed him to be normal. Physical examination showed no trouble except a fractured forearm, dental caries, and somewhat undersize for his age. He is said to have recently had influenza.

He was placed in a boarding home and necessary physical treatment given at the out-patient clinic of the Medcal College of Virginia; has been under supervision of a social worker of the State Department of Public Welfare, and psychotherapy directed by the clinic psychiatrist. Mental and nervous disturbances gradually disappeared though he had an emotional upset about six weeks after his commitment.

He now seems in a normal condition, and has entered a school near his boarding home.

The interesting features in this case are the patient's age, his tuberculous family history which may or may not have had effect on his constitution, his unhappy home life, lack of parental care, incompatibility between his teacher and himself, his emotional stress, fears and the like, development of stealing, truancy and other acts of misconduct, acute emotional and mental disturbances; and, finally, the satisfactory results attained from a congenial home environment, nutritious food, hygienic living, social and psychiatric supervision, but particularly an *understanding of the boy himself.*

What was the cause of this boy's anti-social behavior, followed or accompanied by more or less neurotic and mental disturbances? From my point of view, it was in part at least reaction from his discontented state of mind caused by his luckless life. In his misconduct he was for a while successful and attracted attention, and consequently was being compensated for his feeling of failure and humiliation. This sort of compensatory reaction has been observed in many of the problem boys and girls studied at the clinic, having feelings of insecurity, inferiority, or discouragement often caused no doubt by parents, teachers or others who had a misconception of the child's personality or real needs.

Clinic Service Expansion. Success in saving even a small percentage of patients studied by this and other mental clinics from being later in life sent to a mental or a penal institution, or becoming failures and misfits outside, warrants considerable expansion of this type of activity so as ultimately to embrace the entire state. Several other states are successfully carrying out plans of community clinics, mental hygiene and psychiatric. They bring about co-ordinating activity between parents, health agents, schools, courts, public welfare bodies, general and mental hospitals, and the medical profession, and thereby have educational value in promoting mental health.

There are frequently brought to the clinic young people in whom physical, emotional and mental handicaps and failures in school perhaps preceded, and certainly aggravated, probably caused, their anti-social behavior. For many such patients the family physician with interest in mental hygiene and insight into the conflicts of youth, and especially his familiarity with environments, could render very constructive service in the field of prevention of behavior problems and emotional and mental disturbances.

The Mentally Handicapped School Child. Relative to the schools of the state, Norfolk, Richmond and perhaps some other cities, have each a system of psychological examinations, classifications and vocational training, but there is no state-wide service of this kind. It is, therefore, encouraging that a progressive step is being taken by the State Department of Education with reference to retarded and deficient children in the schools throughout the state. I am informed by Dr. Sidney B. Hall, Superintendent of Schools, that the plan is to conduct a testing program, to cover a three year period, for the purpose of classifying the children in terms of mental ability. This plan includes provision for a revision of the curriculum based on the results of the investigation. Dr. Henry B. Elkin, a prominent mental hygiene authority, says that: "It is firmly believed that the teacher occupies a strategic point in any plan of mental hygiene for the community. It (the school) is the largest organized group through which practically all of our children must pass," and consequently offers the best field for mental hygiene.

Some Activity of the State Hospitals and Medical Schools. During the past two years the state hospitals and colonies have held demonstration psychiatric clinics at meetings of the State Medical Society and a few county and district medical associations. In some instances the meetings were at an institution, where the general medical profession had practical lessons relative to symptomatology, diagnosis and treatment of various types and stages of mental diseases. At each of such meetings invited psychiatrists and neurologists and some members of the hospital staff have read papers of much value.

In eugenic sterilization of the feeble-minded, epileptic and insane patients whose mental disability was regarded as hereditary or incurable, and under care in one or another of the state mental institutions, these mental health centers are contributing to the future reduction of mental disorders. As long as sterilization is kept under scientific medical control, it will remain a preventive measure of value.

The medical colleges of the state have, in

connection with the state hospitals, initiated activities that have a bearing on the prevention of mental disorders, in giving the students more clinical training in psychiatry and a better understanding of mental hygiene than was possible for the present or past generations of practitioners. The arrangements by which senior medical students spend some time on ward service at a state hospital, or groups of selected mental patients from a mental hospital are temporarily cared for in the hospital of the medical school, give the students and the nurses needed bedside experience with different types of cases and a knowledge of the interrelationship between physical and mental diseases.

The medical department of the University of Virginia began this year a child guidance clinic and courses in mental hygiene. The Medical College of Virginia has for two years utilized the Children's Memorial Clinic at Richmond for the benefit of some of its students. The Medical Department of the University has the past year taken an advanced step in admitting to the wards of its hospital about 250 patients in the incipient stages of mental disorder, some being epileptic also, preventing sometimes commitment to a state institution, and making possible thorough study and accurate diagnosis. This is helpful to the general practitioner and demonstrates that general hospitals can and should be used to serve mild or border-line mental patients, without the formality of legal commitment. But it does more than that,—it brings to the teaching staff of the medical school excellent clinical material. This action is in line with in- and out-patients psychiatric services—a very proper step forward in mental hygiene and medical education, and in prevention of the development of mental disease.

Conclusion. In a recent address, Dr. C. M. Hincks, General Medical Director of the National Committee for Mental Hygiene, said that he was not afraid of the future for mental hygiene provided we are not carried away by any theory, no matter how attractive, and provided we do not hold out hopes and claims beyond reasonable possibilities of fulfillment. I am in thorough accord with this view.

An intangible influence of this society is already being strongly felt in the development of the organized mental hygiene movement in Virginia. If the state is, however, to check the continued increase in the number of her mentally diseased and mentally defective population with its corresponding increase in the public and the personal cost, and in human suffering, the program must be extended in a scientific carefully worked out plan.

With the ending of the long isolation of psychiatry, the progress in the knowledge of mental hygiene and the intelligent cooperation of educational, social welfare and public health agencies with the medical profession leading, there will be, I believe, in reasonable time considerable decrease in mental disorders. Comparatively little, however, can be accomplished without the liberal financial and progressive legislative support of the State.

326 *State Office Building.*

A SUGGESTED PROGRAM OF MENTAL HYGIENE FOR VIRGINIA.*

By BEVERLEY R. TUCKER, M. D., Richmond, Va.
Professor of Nervous and Mental Diseases, Medical College of Virginia.

This symposium will, I hope, be the means of pointing the way toward substantial mental hygiene development in this commonwealth. But we must make haste slowly. We must weld our chain link by link. We must be content to halt, to catch our breath, to contemplate and to measure our distant goal with a cautious eye, but with an eye, however, lit with the light of hope.

Nothing, in my opinion, can so postpone our accomplishments, so dampen our ardor or so damn our influence as to jump at conclusions with incomplete investigation and myopic vision. Our danger lies not in the lack of enthusiasm and of propaganda, or in our unwillingness to perform and to do our bit, but in the very fact that we have these propensities and that a psychomotor urge to get busy, to waltz around and to kick up a medico-socio-psycho rumpus possesses us. Hence, we go to the bat, hurrah for ourselves because we have hit the ball, pass the first base of a psychology clinic, the second base of follow-up social work, the third base of sterilization mutilation and we are making for the home plate before we realize that we have batted a fly which may be easily caught by the right-fielder and that we may have been out before we started.

*Read as part of the Symposium on Mental Hygiene before the Medical Society of Virginia at its sixty-second annual meeting, in Roanoke, October 6-8, 1931.

Human life did not begin with the birth of an individual—it started with the creative force behind the inauguration of the first minutest particle that initiated evolution and it ends not with death but in an infinity beyond the realm of imagination. We love, however, to shoot at the stars and so we attempt to grasp with our clumsy hands that ethereal essence of the brain and of the body, the human mind and to mold it and to form it to our material wish. Let our ego beware lest this mental Frankenstein which we are creating be so grotesque that it frighten our groping selves into temporary, or perhaps into permanent, mental aberation.

In spite of our limitations there are some things we may do propitiously; we may contemplate, study, observe, measure, investigate, take note. These things, I take it, after hearing the most excellent preceding papers, are the functions we are called upon to perform for the mental hygiene movement in the State of Virginia. But it has apparently become necessary in the development of our so-called civilization to hook, like wagons hitched to stars, some material form to thought; hence, to obtain any audience at all, to raise any of that greatly coveted substance called money and to touch the heart of that octopus, which ensnares us all, society, we shall have to be practical.

What practical suggestions, then, may I offer in this symposium on mental hygiene? I have but two to offer, but they cover a great deal, and the details of these suggestions shall have to be left for future consideration.

My first suggestion is the establishment of three clinics for the study of mental disorders, one to be at the University of Virgina, one at the Medical College of Virginia, and one in Roanoke. These locations are both psychologically and geographically desirable. These clinics should be in direct connection with existing general hospitals and should consist of psychiatric pavilions or departments; they should be both eleemosynary and remunerative; they should have both ambulatory and bed patients; they should be staffed by competent psychiatrists; they should be psychiatric study centers; they should be under state control.

It would cost possibly $100,000.00 each to build and to equip these pavilion clinics of approximately thirty beds each. The pay patients would aid in financing the clinics. They would save the state money by lessening the congestion at the state hospitals. It is not impossible that outside financial assistance may be obtained.

Admission to the out-patient department should be unrestricted, but admission to beds should be selective. Other than in exceptional instances, bed-admission should not exceed two months. Bed patients should be admitted either under a voluntary commitment or under a temporary legal commitment.

At these clinics we would observe, study and record our findings, we would teach the rudiments of mental hygiene and psychiatry, we would bring mental hygiene in touch with society and keep it from being looked upon as a thing apart from society. Here we would study individuals, body, mind and soul of any age, and of any background in coordination with all the other branches of medicine and with all the appliances of modern facilities at our command.

There are today in the state hospitals for the mentally affected in Virginia, approximately 6,500 patients, living at the expense of the taxpayers of the state, the vast majority of whom have never been, and under the present arrangements can never be, adequately examined. Such examinations at these clinics would not immediately deplete the state hospitals of any great number of patients, but it would deplete them of a few and it would lay the ground for lessened future admissions. These clinics would most certainly be a means to such an end.

At these clinics the relationship of conduct disturbance and mental derangement could be studied, which relationship in the opinion of many of us is exceedingly close. I am of the firm belief that the ends of justice would be furthered and that the state could be saved the expense of many long drawn out criminal trials.

My second suggestion for the advancement of mental hygiene in Virginia is the appointment of a Governor's Advisory Board of Mental Health. This board, in my opinion, should be non-political and without power to act. It should be appointed by the Governor, upon the recommendation of the Medical Society of Virginia, and its function should be to study all questions related to mental hygiene in the state, without interfering with the function of any existing board or agency, and to report

its findings and its suggestions both to the Governor and to the Medical Society of Virginia. This board, among other things, could study the question of a graded charge for patients at the state hospitals who can afford to pay, a plan for the coordination of mental work in the state, a plan for mental examination before trial of those persons indicted for felony, including capital offense, the issuance of a better form of commitment papers for the insane, the feeble-minded, the inebriate and the drug addict, and suggest a closer connection between the State Board of Health and mental disease.

In conclusion, allow me to say that the movement for mental hygiene in Virginia is moving, but it is moving in devious and bizarre directions. Therefore, let us at least survey for this movement a road and let us direct this road over river and mountain and valley toward, at least, the horizon of the land of promise. Else we are likely to run into swamps and mires and against insurmountable cliffs and we may come, exhausted, poor and hungry, though still valiant and with rings on our fingers, bells on our toes and trumpets to our lips, into the land of nowhere.

212 *West Franklin Street.*

Discussion of Symposium

The General Practitioner in Relation to Mental Hygiene

Dr. I. C. Harrison, Danville: The field of activity for the general practitioner, it may be said, at the beginning of this paper, has no specified boundaries or limitations—the whole man is ours to study. The general practitioner is not supposed to know all about any particular portion of the body, but he is at one time or another called upon to minister to the complaints, defects and diseases of every part of the human anatomy, and is expected to have a fairly accurate knowledge of them all.

The feeling is pretty general among physicians that nervous and mental disease and the problems of psychiatry are outside of their sphere, and that the practice of medicine does not include dealing with what we call mental hygiene. I am convinced that this position cannot be reasonably maintained by any thoughtful, careful and conscientious physician. God created man, body, mind and soul. The Great Physician himself administered to all three of these. We, in the performance of our duties as physicians, must as far as possible treat the whole man.

The healthy individual is one who possesses a sound mind in a sound body, which means that good health does not simply presuppose a strong, vigorous body, but a body governed and directed by a normal, well balanced mind. In the study of the body and its diseases we must not overlook the fact that man has a mind as well as a body.

The history of medicine is the story of struggle from darkness and superstition, step by step, through the years, until we find ourselves today as a profession having learned much but still searching and finding much still to be added to our store of information. In the past few years there have been numbers of campaigns for enlightening the public and profession in certain particular aspects of medicine and in reference to certain diseases—as examples: cancer, tuberculosis, venereal diseases, pellagra, etc.

And now more recently the Mental Hygiene movement is on. The people must be informed—the medical profession must be educated and informed also; their active interest and cooperation secured.

It has not been long since it was considered more or less of a disgrace to have tuberculosis, or cancer, or leprosy. "Too often the terms 'lunacy' or 'insanity' conjure up disturbing visions of restraint and violence." In the light of our present knowledge all these diseases are the everyday problems of the general practitioner, and he cannot treat one and reasonably feel justified in neglecting any of the others.

Quoting Dr. E. A. Strecker, of the Jefferson Medical College: "The sooner knowledge of the principle on which Psychiatry is founded becomes diffused among the ranks of the general practitioner, the sooner will they learn some very useful lessons which may be applied in their every-day practice. Very often, in the patient who has a mental disease, we have simply a case for diagnosis. From such a point of view, the general practitioner, as well as every other brother specialist and laboratory expert has something to contribute. There is only one conception that is worth consideration, and that is that so-called insanity is simply a disease and deserves the same careful and general medical attention as other diseases whose cause is in doubt, as, for instance—cancer."

Mental Hygiene has been defined as the "science and practice of the preservation of mental health," and would mean study and research finally leading towards prevention and cure of mental diseases. It would seem impossible for the general practitioner to escape the responsibility of informing and educating himself in the care and treatment of this class of cases. A few figures and statistics may help to emphasize this statement:

Dr. D. C Wilson, who has made a careful survey in this State, tells us that one per cent of our population, because of nervous and mental disorders, needs segregation, two per cent in addition require special supervision outside of institutions, or about 50,000 in this State outside of hospitals, jails and penitentiaries.

The physicians of this State are, in a large measure, responsible for the present care of this 50,000 or more, for under the present conditions of our modern life, the present unemployment situation, and the contentions and accidents incident to idleness, unrest and dissipation, there is no means of predicting how much these figures may be augmented.

The conditions are no better in other States and are similar to those in our own. The number of patients in nervous and mental hospitals in this country far outnumber those in all other hospitals combined.

As to the cause of mental disorders, or conditions bearing on mental disorders—heredity, unfavorable environment, physical disorders, diseased foci, convalescence from illness, conditions at certain periods of life, addiction to drugs, alcoholism, epilepsy, luetic infection, etc.—these are all important

from the standpoint of the general practitioner. In many cases he alone knows the history and, with the advice and cooperation of the psychiatrist and his own influence with the patient and the family, can accomplish results that would otherwise be impossible to attain.

In the carrying out of certain prophylactic measures the general practitioner can accomplish a great deal—in advising against the marrying of the physically unfit, those of low mentality, epileptics, and criminals, and sterilization of the same class, advocating proper hygienic laws, regulating marriage, etc.

It seems to me that it is hardly necessary to stress the question of the responsibility of the general practitioner in the face of the great need as shown by these figures; there are comparatively few specializing in psychiatry and mental diseases, and of necessity the general practitioner must treat the great majority of these border line and mental cases outside of institutions. The great need for special knowledge in these cases should stimulate the general practitioner to study and preparation for treating mental and nervous cases that many consider outside of their particular line of work.

The present activities for the prevention and treatment of mental disorders in this and other States are directed toward informing the public and the medical profession and conducting mental clinics for children and adults. I know from personal observation of mental hygiene clinics in this State that the cooperation and hearty support of the general practitioner in a community are earnestly desired, and that the success of the clinics is largely in proportion to the cooperation accorded by the general practitioner. Any program proposed or adopted for handling the mentally sick outside of hospitals must fail if not endorsed and backed up by the general practitioner. At this time when the Department of Clinical Education of the Medical Society of Virginia is endeavoring to provide opportunity for post-graduate education to physicians all over this State, we should not fail to stress the importance of holding clinics on this very important subject, and make it possible for every general practitioner to better qualify himself for treating and caring for those who are mentally sick

In conclusion, let us not forget the thousands outside of institutions needing the intelligent care of physicians, many of whom, if neglected, will later have to be hospitalized, adding to the already heavy economic burden of the State and nation.

Discussion in Relation to Surgery

Dr. R. L. Payne, Norfolk: I guess it is a foregone conclusion that a surgeon, in this sort of symposium, is in water decidedly over his head, but after twenty-five or more years of surgical work I am convinced that it is impossible to separate the mental and the physical complaints of an individual patient, because they are so closely allied. Every successful surgeon that I know is a philosopher, and much of his philosophy is based on a keen and thorough understanding of psychology. I am convinced, from a surgical point of view, that a complete study of every patient often brings out mental factors that have a very definite and distinct bearing on the outcome; and it has been my misfortune many times to find many pre-operative and post-operative reactions that have had a distinct influence in delaying the convalescence of a surgical case, even to the point of death. In illustration, I should like to tell you the story, very briefly, of one woman who I am fairly certain died from fright and nothing else. She had a simple operation for a hernia, but in the ward where she was located there was admitted the night before her operation an insane woman. This insane woman heard that this patient was going to the operating room and continued to reiterate to her that she was going to die, that the surgeons were going to kill her, and that the outcome was inevitable. The morning that she was put on the stretcher and taken out of the ward to the operating room this insane woman rose up in her bed and shook her finger at her and said: "You are going to hell now; they are going to kill you." The woman died at four o'clock that afternoon, after a very simple femoral hernia operation. The autopsy showed absolutely no cause.

What are surgeons doing to avoid mental anguish? The radio is used in many operating rooms. Many operators allow the patient to smoke cigarettes. Some chew chewing gum. One thing is going to come out in print in a few months—the story of a very famous St. Louis surgeon, who is at this time decorating his operating room. He has a new operating room. Around the top of the wall he has pictures of Br'er Rabbit, Mother Goose, and other pictures for the amusement of children. Finally, in the ceiling he has worked out a very intricate design of the Turkish rug variety, upon which the person lying on the table with face upward can speculate *ad infinitum*. This goes to show, gentlemen, that surgery is not lagging behind in striving to solve the very important mental problem.

Discussion in Relation to Pediatrics

Dr. L. T. Royster, University: I think that all who are informed on this subject will agree that the most far-reaching results in the line of mental hygiene will accrue from efforts made during the period of childhood. In 1895, Forbes Winslow, the eminent British psychiatrist, published a little book entitled "Youthful Eccentricity a Precursor of Crime," and so far as I am aware this is the first intelligent observation which focused attention on the relationship between what we call today behavior problems of childhood and crime later on; not that crime as such may be the only sequel to youthful eccentricity.

Character (including personality), is the result of the eternal struggle between two forces, inheritance on the one hand and environment (including education), on the other. These two forces may act in either a cooperative or an antagonistic manner, in one instance developing the heritage and in the other repressing it, for it is a well recognized biological truth that progress among all living creatures or things can be made only through the cooperative efforts of development and repression. It is advisable, therefore, to begin early in the life of the infant to encourage desirable traits and habits and to discourage those not so desirable. Extensive observations have been made during the last quarter century in child psychology and psychiatry with the obvious purpose of determining what is normal behavior in a child and what is abnormal behavior with the ultimate end in view of preventing abnormal conduct and correcting abnormal deviations when they occur.

It is a serious question whether we have as yet learned what is normal conduct in an individual. All investigations tend too strongly to study and stress averages, and we forget too often that what is abnormal for one individual is quite normal for another. To be sure a wide deviation from average conduct in a child of a given age may be considered abnormal but who is going to determine borderline cases. There is too strong a tendency to force every

child into a conventional behavior mold, considered by some normal—forgetting the individual.

We are prone to lay the blame for what appears to be an increase in behavior problems among children on the increasing complexity of modern life and this is probably in part just. It is also obviously impossible to return to a more simple life, while adjustments to rapid changes are difficult and require time. We adults feel the speeding up of all activities and suffer therefrom. The child necessarily participates in this reaction, directly in many instances, but perhaps more often reflexy from the conduct of the family. To one who comes in contact with problem children it is quite obvious that our reliance for their detection, and in a measure correction, must be on three groups, namely, parents, family physicians, school teachers and school authorities. Psychiatrists and pediatricians must remain in an advisory and consulting capacity. These three groups must be instructed carefully and intelligently and, if I may add, from authoritative sources. Physicians themselves, and particularly pediatricians, have been guilty in the recent past of centering the attention of mothers and teachers on certain phases of the developing child mind to an extent which has made them anxious and has caused them to handle children in a manner which is not conducive to calm and sane mental development. Much harm has been done by articles in both the medical press and popular magazines on "Child Guidance" by uninformed individuals in which average conduct has been called normal with a consequent exaggeration of the significance of minor deviations, which are in many instances merely emphasized natural reactions.

I do not wish to be understood as denying or even underestimating the existence of problem children, for I am only too familiar with them. I also am in favor of and have only praise for intelligent efforts which have been or will be made looking to an alleviation of an unfortunate and pathetic condition. But it seems to me that if we are to succeed in these efforts two things are necessary: First, to correct a certain amount of evil which has already been done through uninformed writers and speakers, and second, to secure more authoritative statements and advice from those who are qualified to make them.

OUTLINE OF A PRACTICAL CHILD GUIDANCE CLINIC.*

By HARVIE DEJ. COGHILL, M. D., Richmond, Va.
Director and Psychiatrist, Children's Memorial Clinic.

Over three thousand years ago a wise man said, "Train up a child in the way he should go and when he is old he will not depart from it." That is what the child guidance clinic is trying to do today—to help the parents and the school "to train up a child in the way he should go." The child guidance clinic helps to keep your child on the right road. To do this, it must bear in mind, "What are the fundamental needs of the child"? They are: *First*, security; *second*, the chance to grow; *third*, concrete ideals to grow toward; and, *fourth*, the companionship of his contemporaries. These are some of the things that are necessary if the child is to keep on the right road; regular hours for meals and sleep; physical care; firm, kindly discipline; wholesome play; sex instruction by parents; regular home duties; good schools; moral and religious training; cultivation of love of beauty; organized recreation; vocational guidance. The child who has traveled this road is on his way to a useful, happy life.

The child guidance clinic is a mental hygiene clinic for the purpose of studying and treating the behavior habits and personality problems of childhood and adolescence from prekindergarten to college,—which includes both superior and inferior children. The child who comes to the clinic has, by his behavior in the home, or school, or community, been subject to more than ordinary difficulties. The behavior difficulties are indicated by the symptoms arising from any of several causes and of various combinations of causes. Symptoms may be grouped as follows:

1. Undesirable habits of infancy which have persisted into childhood, such as enuresis, masturbation, thumb-sucking, peculiar food fads, night terrors, and mannerisms of various sorts.

2. Undesirable personality traits, such as extreme degrees of sensitiveness, seclusiveness, secretiveness, apathy, day-dreaming, imaginative and fanciful lying, nervousness, moodiness, quarrelsomeness, lack of interest in school or of ambition, cowardliness, inability to get along with other children.

3. Undesirable behavior, such as disobedience, bullying, destructiveness, cruelty, temper tantrums, defiance of or rebellion against authority, keeping late hours, seeking bad companions, sex activity, lying, stealing, truancy.

Some of the reasons why children need to come to the clinic may be looked upon as sidepaths from the road to useful citizenship. They may be called problem situations. It is well to shift the emphasis from problem child to problem situation wherever possible. Here are some problem situations and the resulting symptoms: *Irregular meals and sleep* lead to underweight, fatigue, restlessness, peevishness, scariness, fears, night terrors, and distrust. *Parental indulgence* leads to temper tantrums, selfishness, lack of self-reliance. *Undue severity* leads to stubbornness, defiance, lying. *Lack of wholesome play* leads to meddlesomeness,

*Read before the State Conference on Childhood and Youth in Richmond, November 24, 1931.

day-dreaming, seclusiveness. *Wrong sex information* leads to secretiveness, wrong sex ideals, emotional upsets. *Wrong school placement* leads to poor work, discouragement, mischievousness, laziness, truancy. *Neglect of health* leads to listlessness, irritability, nervousness. *Tying to apron strings* leads to sissiness, lack of independence, lack of initiative. *A father's indifference* leads to wrong companionship and failure to attain ideals of manhood. *A poorly run home* leads to carelessness, shiftlessness, irresponsibility. *Nagging* leads to sullenness, antagonism, rebellion. *Injustice* leads to distrust, deceit, jealousy, getting even. *An uncongenial home* leads to unhappiness, emotional upsets, running away from home. *Lack of organized recreation* leads to bad companions, petty crimes, lack of civic responsibility. *Too much restriction* leads to rebellion against authority, staying out late at night, running away from home. *Bad examples in the home* lead to low standards of honesty, truthfulness, and morality. *Leaving school too early* leads to "blind-alley" jobs, low wages, lack of success in later life.

The clinic attempts to deal with these problems by treating the whole child in such a way that delinquency and mental disorder may be prevented and a happier and healthier adaptation made to life. The clinic does not favor one technique of therapy above all others, but makes use of the best that psychiatry, psychology, medicine, and social work afford, the type of treatment depending upon the need of the individual child.

The term "mental hygiene" means literally the art of mental health and its preservation. Just as medicine is an art based on certain sciences and applied to the maintenance of physical health, so mental hygiene is also an art derived from certain basic sciences and applied to the maintenance of mental health. Mental health does not mean merely a freedom from disease, but the ability to attain certain attitudes towards one's own task, one's rest and recreation, one's fellow men, and towards life—and to maintain satisfactory human relations. Everyone who has to do with the problems of human behavior has a place in mental hygiene—the school teacher, the minister, the parent, the nurse, the general practitioner of medicine, the judge, the lawyer, the criminologist, the probation officer, and more especially the pediatrician and psychiatrist, psychologist and social worker. It is through these that progress is being made in mental hygiene both as an art and as an organized social movement.

The child guidance clinic, with its staff of psychiatrist, social workers, psychologist, pediatrician, etc., functions not only as a mental hygiene clinic interested in the individual child, and serving the court, school, and the community, but also it functions as an educational agency in the spread of mental health. Mental health principles evolved in the study and treatment of the child are passed on to the parents, the school teacher, the school nurse, the judge and probation officers, the social worker and physician, and by them to other persons in the community. Also, members of the clinic staff give courses at colleges and universities on social psychiatry and psychiatric social work, utilizing the material gleaned from case histories and clinic experience. No case history, however, is ever used so that anyone might identify the child. All communications concerning the child and his family are held strictly confidential.

When Billy Anychild comes to the clinic, he is given a careful physical examination by the pediatrician, or child specialist. (As a rule, the pediatrician, after graduating from medical college, spends some years in a children's hospital devoting his time exclusively to the diagnosis and treatment of children's diseases). The physical examination is supplemented by laboratory tests, including blood Wassermann, blood count, urinalysis, etc.

Next, the child is seen by the clinic psychologist, who is a college graduate with a Master's or Doctor's degree conferred for special work in psychology, particularly for the measurement of mental capacity, defects, and achievement. The child is given various tests to measure his intellectual and emotional development in comparison to that of other children of his age, to discover special abilities and disabilities, and to measure his educational achievement.

The psychiatric social worker of a child guidance clinic is typically a woman who has graduated from college and taken training in psychiatric social work in one of the standard schools giving especial attention to the subject. A complete social history is obtained by the social worker who interviews the parents, teacher, and others who know the child. Her

object is to obtain information concerning the family history and all phases of the child's own life history in an attempt to bring out the parents' attitudes and feelings about the facts of the child's history and interplay of personalities in the home and the relationship between the parents' specific attitudes and the child's behavior. The treatment actually begins with the parents' first contact with the clinic and not simply at the completion of the child's examinations.

The psychiatrist is a graduate physician who has spent several years in mental hospitals studying adult psychiatry, and, in addition, has had one or more years training as a Fellow in a child guidance clinic. When the psychiatrist sees the child, he has already become acquainted with the reports from the pediatrician, the laboratory technician, the psychologist, and the social worker, and has obtained from these reports what are known as "leads" to aid in the psychiatric interview. In the light of this information, the psychiatrist attempts to discover by the "silence" method, or by indirect questioning, the child's attitude towards himself and his various reactions to the family situation and to the school and community situations. The psychiatrist learns from the spontaneous statements of the child how conscious the child is of his difficulties and what he considers to be his main trouble, upon whom he places the responsibility, how he feels about his own weaknesses, and failures, and just what needs he is trying to satisfy by his behavior. Direct questions are apt to make him defensive and cause lying. The child usually talks about his play habits and other interests, his fears, his gang life, and when there are emotional conflicts information concerning them is usually elicited. He frequently gives a very good picture of the home situation.

One of the clinic's strongest points is probably the use of what is known as the "staff," or the conference method of determining causative factors, making recommendations, etc., because this involves the pooling of a number of points of view. After all of the information about the child's history has been secured, and when all of the examinations have been completed, the staff assembles to *consider* the child. The various examinations are interpreted and a treatment plan is worked out to meet the problems of which the parents are aware and also those which seem of importance to the clinic. Sometimes the family physician, visiting teacher, school nurse, or school teacher, principal, or probation officer is present. If Billy Anychild shows the need of treatment for his physical condition, he is referred to the family physician or to an appropriate medical clinic. If his school placement is incorrect, a suitable recommendation is made to the school teacher, visiting teacher, or school nurse. If indicated, direct psychiatric treatment also may be undertaken. Effort is made in contacts between psychiatrist and patient to gain further insight into the mental mechanisms of the patient, to give him insight into his own emotional drives and reactions, to give him an increased understanding of himself, and to help him build up an ideal self toward which to strive. When it becomes necessary to change parental behavior, this may be done by the social worker and psychiatrist working in cooperation, but the bulk of the social treatment falls in the department of the psychiatric social worker. Social treatment has many aspects, the chief of which includes the following: Getting across to the parents the patient's needs; soliciting their cooperation in fulfilling these needs; helping them work out their own difficulties insofar as these affect the child's problems; securing community contacts and outlets for the patient; interpreting clinic recommendations to the schools, the Court, foster and boarding-parents, relatives, and other people who may be instrumental in effecting a readajustment.

In conclusion, I quote Dr. Chamberlain: "It may be safely stated that the limitations with which a child guidance clinic is faced are outweighed, by far, by the responsive cooperation it receives from perplexed agencies, distressed parents, harassed teachers and disheartened, malcontented children. In its cooperation with parents, physicians, teachers and agency workers, and the court, the clinic not only has assisted disturbed children to an improved physical and mental status, to a more adequate and gratifying intellectual expression and achievement and to a satisfactory emotional stability—fundamental factors which tend to facilitate academic progress, vocational selection, acceptable recreational satisfaction and ultimate social adaptation—but it has done more. It has brought psychiatry out of the diagnostic and custodial field, and taken it into

the realm of prevention and shoulder to shoulder with education."

BIBLIOGRAPHY

Allen, Frederick H., M. D.: The Evolution of Our Treatment Philosophy in Child Guidance. Reprint No. 442, the National Committee for Mental Hygiene.

Anderson, Forrest N.: Six Years of Child Guidance. *Journal of Juvenile Research*, California Bureau of Juvenile Research. April, 1931.

Chamberlain, H. E., M. D.: School Clinics. The American Foundation for Mental Hygiene, Inc.

Coghill, Harvie DeJ., M. D.: The Clinical Approach to the Problem Child. *Virginia Medical Monthly*, February, 1930.

Coghill, Harvie DeJ., M. D.: The School Teacher as a Mental Hygienist. *The Messenger*, November, 1930.

Lowrey, Lawson G., M. D.: A Program for Meeting Mental Hygiene Needs in a City. Division of Publications, The Commonwealth Fund.

Reynolds, Bertha C.: The Role of the Psychiatric Social Worker in Therapy. The American Foundation for Mental Hygiene, Inc.

Stevenson, George S., M. D.: Organizing for a Child Guidance Clinic. Division of Publications, the Commonwealth Fund.

Stevenson, George S., M. D.: The Child Guidance Clinic—Its Aims, Growth, and Methods. The American Foundation for Mental Hygiene, Inc.

Truitt, Ralph P., M. D.: The Child Guidance Clinic and the Community. Division of Publications, the Commonwealth Fund.

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THE FAMILY PHYSICIAN'S DUTY TO THE SQUINTING CHILD.

By FRANK P. SMART, M. D., Norfolk, Va.

Reversing the usual order in presenting a subject I will begin with my conclusion, viz., any child, however young, who squints habitually should have its eyes examined by a competent ophthalmologist. The treatment required may vary all the way from immediate enucleation of the eye to merely maintaining an attitude of masterly inactivity. Any squinting child has been neglected, and probably irreparable damage has been done if he is allowed to arrive at school age without every effort having been made to ascertain and correct the cause of the squint. In almost every case of strabismus that I see the history is given that the family physician was consulted early and he advised waiting to see if the child would outgrow the squint. Such advice is sound only after a careful ophthalmic examination, and even then it is dangerous unless the child is kept under fairly close observation and everything possible done by the time he is six years of age. The great danger in watchful waiting is that we may wait too long, and we find that instead of outgrowing the squint he has passed on through the period when he should have developed binocular single vision. We may then straighten the eyes, but the patient is surely doomed to go through life virtually one-eyed—even though both eyes appear normal and straight.

Immediately after birth the child receives sensations due to the light that is focused on the retinae of the two eyes. These sensations are quite intense and occupy a great deal of his attention. He does not know what they are, is unable to interpret them, does not know nor care whether they come from without or within. The images falling on the macular region in each eye are much more distinct than those falling on the peripheral portions of the retinae; consequently, they claim most of his attention. Now, if the two eyes are not pointing toward the same object, he will have one picture on the right macula and an entirely different one on the left macula, the two pictures being equally clear, demanding his attention with equal insistence, thus tending to produce confusion. In moving the eyes around aimlessly he chances to get their axes parallel or nearly so, with the result that the pictures on the two maculae are the same. Instead of having two different pictures to consider, he has two pictures that are nearly identical, and he soon learns to fuse these two identical pictures into a single mental impression, doing away with the necessity of divided interest. The pictures in the peripheral portions of the two retinae show slight differences due to the difference in location of the two eyes. These differences are not very evident except when looking at objects near the eyes. Having once learned to fuse the two pictures into a single mental impression, these differences give a clue as to the relative distances of objects from the eyes, and are interpreted as depth. This is stereoscopic vision, and, after it is once acquired, if either eye does not point with its fellow, double-vision, confusion and discomfort result and remain until the deviating eye is forced back into its proper position. Thus, any squint is violently resisted, both eyes are used alike, develop alike and stay straight, being held straight by virtue of the functioning of the fusion faculty, even though there may be some imbalance of the extra-ocular muscles.

If this fusion faculty be not developed by

the age of six or thereabouts, it seldom, if ever, can be developed later; and, furthermore, if the child squints habitually, *no matter how small the amount*, he is not developing the fusion faculty but is doing exactly the reverse. Instead of learning to see clearly with each eye and to blend the resultant images into a single picture having the quality of depth, he is learning to get relief from the double vision, produced by the squint, by blotting out from his consciousness and suppressing all sensations coming from the squinting eye, concentrating his whole attention on the image formed in the fellow eye, and getting true monocular vision, clear, perhaps, but totally devoid of any impression of depth. No matter what is done to the deviating eye later in life, it will always be amblyopic.

That the development of this fusion faculty should be so strictly limited to these few years of early childhood may seem strange, but there are numerous analogous instances in the mental and physical development of the individual. A middle-aged foreigner coming to this country may live here the rest of his life and never be able to speak our language distinctly, whereas his child, born here, and no brighter than its father, learns to speak without any sign of a brogue in a few years. An embryo can absorb in a few months or weeks certain organs or tissues which have served their function and are no longer needed, such as the pupillary membrane and hyaloid artery, but the ability to absorb them is restricted to embryonic or early infant life. If there are any vestiges of these structures present in an infant, they usually remain throughout life. An infant can increase his weight six or eight fold in six years, but you cannot. The faculty of rapid growth is peculiar to the first eighteen years of life, and, likewise, the ability to develop the fusion faculty is peculiar to the first six years of life.

There are two main classes of conditions that tend to bring about the development of a squint:

1. Those affecting the extrinsic muscles of one or both of the eyes, or their innervation.

2. Those producing marked disparity in clearness of the images in the two eyes.

Without attempting to be exhaustive in elaborating this classification, I will give a few illustrative cases. This discussion does not include cases that show a squint only when attempting to look in some certain direction. Such cases are of paralytic origin, and the fusion faculty, or lack of it, does not enter into the picture at all.

The first illustrative case of the extrinsic muscle type is that of a boy four years old. There is a constant, concomitant, internal squint of 4 m.m. Vision normal in each eye. He fixes sometimes with one eye and sometimes with the other. Careful refraction under atropine drops shows both eyes normal or nearly so. The excursions of each eye seem normal. This is manifestly a case where one or both of the internal recti have so great a mechanical advantage over their antagonists, the external recti, that the latter were unable to get the eyes straight and hold them so for a sufficient length of time for the development of fusion. By the appropriate operation on the muscles, either decreasing the pull of the interni or augmenting the pull of the externi or both, these eyes can be straightened and the child has a chance to develop fusion. If this is delayed until he is 10 or 12 years old, he will not develop fusion and stereoscopic single vision, and all that will be accomplished will be that his appearance will be improved.

A typical case of the innervational type would be as follows: a boy, aged 5, has developed a constant internal squint of 5 m.m. Vision is normal, or very little below normal, and about equal in the two eyes. Refraction under atropine drops shows a hyperopia, or far-sightedness, of 8 diopters. This is purely an innervational case, and is explained as follows: there is a close relationship between accommodation and convergence. When a normal eye is looking at a very distant object no accommodation nor convergence are used. When looking at an object 1 meter away, 1 diopter of accommodation and 1 meter-angle of convergence are required. When looking at an object 1/3 of a meter away 3 diopters of accommodation and 3 meter-angles of convergence are necessary. Inasmuch as the accommodation and convergence are increased and diminished in like amount, nature has economized by so arranging things that in order to see something close to the eye, a single neural impulse is sent out from the brain, part of which goes to the ciliary muscles to effect the necessary accommodation, and a proportionate amount is shunted to the internal recti to bring about the corresponding amount of convergence. Now,

in the case in point, with the accommodation relaxed the patient is almost blind, and to see clearly at a distance he has to call into play 8 diopters of accommodation to offset the hyperopia. The brain sends out an impulse sufficient to effect the 8 diopters of accommodation, but, for the reasons mentioned above, the internal recti automatically receive an impulse sufficient to produce 8 meter-angles of convergence, i. e., the eyes would cross, on looking at a distance, as much as normal eyes would cross if looking at an object 5 inches from the face, if this action were unopposed. The only opposing muscles are the relatively weak external recti which keep up the struggle for a while, holding the eyes straight, but they give up the fight sooner or later, usually during some debilitating illness, such as pertussis, which illness will always receive the blame for the squint. If the proper glasses are prescribed and worn, the 8 diopters of hyperopia will be corrected, so that no neural impulse is called out, hence no excessive convergence develops, and, if this is done soon enough, the fusion faculty has a chance to develop. I have prescribed glasses and had them worn successfully by two children of 2½ years, and by several of 3 years of age.

Illustrative of the second class of causes of squint may be mentioned cases where the refractive error in one eye is very different in kind or amount from the error in the other eye, e. g., where one eye is far-sighted and the other near-sighted, or where there is a marked astigmatic error in one eye only. In such cases, where the pictures in the two eyes are too dissimilar to be readily fused, the child focuses all his attention on the clearer picture, allowing the eye with the indistinct image to wander into whatever position the muscle balance dictates. Manifestly, the proper treatment for such conditions would be to correct the refractive error so as to produce normally clear images in the two eyes, giving the child a chance to develop the fusion faculty if done early enough.

That the considerations involved may be more serious than the mere establishing of binocular single vision is shown in this last case which I will mention. A baby of eighteen months was brought in because the mother noticed that the left eye seemed slightly deviated outward. After looking into the eye with an ophthalmoscope, she was sent to the hospital and within about two hours I had removed the eye and as much of the optic nerve as possible. Section of the eye disclosed a huge glioma filling more than half of the vitreous chamber. Microscopic sections showed that it had extended down the optic nerve to within 1 m.m. of the point of section. This was done eight years ago, and to date there has been no sign of metastasis or recurrence. Picture the fate of this child if the parents had decided to wait and see if she would not outgrow the squint.

I realize that some of the statements I have made in attempting to give the explanations of the causes of innervational squint and early development of the fusion sense involve questions that are still in the controversial stage among psychologists, neurologists and ophthalmologists, but everyone of wide experience is agreed as to the conclusions. As you see, this is not so much an attempt at a scientific discussion of the squinting child as it is a plea for the squinting child that he be not handicapped throughout life by a waiting policy on the part of the doctor and parents, but that he be given a chance to develop visually into a normal child by having the cause of the squint removed or compensated for before he is of school age.

810 *Medical Arts Building.*

THE SIGNIFICANCE OF THE SCHILLING DIFFERENTIAL BLOOD COUNT IN ACUTE INFECTIONS OF CHILDHOOD.*

By W. AMBROSE McGEE, M. D., Richmond, Va.

It is not an uncommon occurrence to find white and differential blood counts which do not parallel clinical observations. There is no better illustration than that seen in suspected cases of appendicities. With the present Ehrlich differential blood count, such will continue to be the case, but, owing to the excellent work of Schilling, we now have a new interpretation of the white cells in infection. With the Schilling differential count it is possible to obtain greater diagnostic aid from the blood as well as to frequently anticipate changes in physical signs.

According to Schilling, there are three main groups of white cells, namely, granulocytes, which are increased in acute infections; mono-

*Read before the sixty-second annual meeting of the Medical Society of Virginia, at Roanoke, Va., October 6-8, 1931.

cytes, increased in sub-acute infections; and lymphocytes, which are increased in chronic infections. The role of the granulocytes in disease is the main factor in interpreting a differential blood count by Schilling's classification.

The polymorphonuclear neutrophilic leucocytes, commonly called "polys," are divided by Schilling into four groups, namely, mature, or segmented forms; stab, or almost mature cells; juvenile, or immature form of "polys"; and myelocyte, or youngest form of all neutrophiles. As the blood picture shows a relative increase in the young forms, the change is spoken of as a "shift to the left" or a shift to the immature form of "polys." The other granulocytes, namely, basophiles and eosinophiles, along with lymphocytes and monocytes (mononuclear or transitional cells), are the same in the Schilling as in the Ehrlich differential count.

By arranging the cells in a horizontal line from left to right, it is often possible to see at a glance the condition of the patient. Such arrangement is called a hemogram.[3] From left to right the order is basophiles, eosinophiles, myelocytes, juveniles, stabs, segments, lymphocytes and monocytes. If an imaginary line is drawn between segmented and stab cells, an increase in cells to the left indicates an increase in infection. When stabs alone are increased, Schilling refers to the change as a degenerative shift to the left, while an increase in juveniles and myelocytes, representing more impression on the bone marrow, is spoken of as a regenerative shift to the left.

Changes in cells other than granulocytes also have much significance.[4] An increase in basophiles indicates loss of resistance. The eosinophile is the most sensitive of all leucocytes, and is first to disappear in acute infections. Both lymphocytes and monocytes have a tendency to be decreased in acute infections, and to return when the infection is overcome. A sudden rise in monocytes is spoken of as the dawn of convalescence.[3]

After the monocytes are increased, if the patient still improves, a change to the more mature "polys" takes place. This is known as a shift back to normal or to the right. A high shift to the left with a high monocyte percentage indicates a good phase of defence with the struggle (infection) still raging. Following a shift to the right, a favorable sign is appearance of eosinophiles and an increase in lymphocytes. This last finding indicates a recovery.

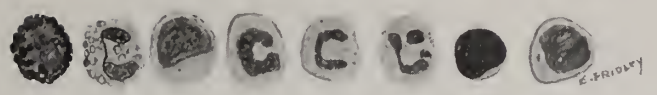
The proportion of immature cells to the total number of neutrophilic leucocytes represents the percentage of the shift to the left. In children, the speaker found a normal shift to the left to lie between 6-10 per cent; in adults, Schilling, Gradwohl[3] and others found the percentage to be about 4 per cent. The severity of an acute infection is judged by the percentage shift to the younger forms, and especially is this true when the shift is composed largely of the two youngest forms—myelocytes and juveniles. A percentage shift of 20-30 in children means slight infection; of 30-50 per cent, a severe infection; of 50-70 per cent, a very severe infection; and over 70 per cent, the danger of impending death. In adults lower figures are usually given. Another index of severity of infection is the nuclear index proposed by Gerard and Boerner.[5] By dividing the segmented or mature forms of "polys" by the three young forms the nuclear index is found. They[5] consider a nuclear index of 15 or more as normal for adults, an index of 10 representing a slight infection, of 5 a very severe disease, and below 5 an extremely severe infection. In children the speaker feels the average nuclear index in well infants and children lies between 5 and 15, while in disease it falls below 5, and in severe infection a nuclear index of 1 or less is usually seen.

Just as repeated physical examinations and temperature records are of more value than a single determination, such is true with repeated hemograms. By means of hemograms taken throughout the course of an infection it is usually possible to foretell improvement or a relapse ahead of clinical findings or symptoms. In fact, use of Schilling differential counts serves as a more sensitive indicator of what is going on in the body than either fever or physical signs. Likewise, changes in total cell counts lag behind hemogram findings.[6]

In addition to acute infections, the Schilling differential count is of value in obstetrical practice and in tuberculosis.[7] Once the diagnosis of tuberculosis is established, the hemogram taken at intervals indicates whether or not the patient is recovering or losing ground, and in some instances even before physical examination, fever, symptoms, or X-ray reveal any trouble.

SCHILLING DIFFERENTIAL BLOOD COUNT

Hemograms in Acute Infections of Childhood



Age	Period of Illness	Bas.	Eos.	Myel.	Juv.	Stab	Seg.	Lymh.	Mono.	Shift to left	Diagnosis	Remarks
V*		0–1	2–4	0	0–1	4–6	35–50	30–55	3–6	6–10%		
9 yrs.	1 d.	.....	.....	2	7	52	26	5	8	70%	Lob. Pneu.	Ac. ill
	2 d.	.....	.....	.....	1	56	26	14	3	68%	.....	.....
	3 d.	.....	.....	.....	.....	27	21	48	4	56%	.....	.....
	4 d.	.....	.....	.....	1	44	22	24	9	66%	.....	O. M. C. A.
	5 d.	.....	2	.....	2	14	34	41	7	32%	.....	.....
	6 d.	.....	4	.....	.....	26	30	35	5	46%	.....	Improved
	8 d.	.....	2	.....	.....	24	31	34	9	43%	.....	.....
	9 d.	.....	.....	.....	6	14	37	41	2	35%	.....	.....
	11 d.	.....	1	.....	1	14	33	48	4	31%	.....	.....
	14 d.	.....	2	.....	.....	19	37	40	2	33%	.....	Prac. well
18 mos.	2 d.	.....	.....	.....	4	20	19	47	10	55%	Nas. Pharn.	Ac. ill
	3 d.	.....	3	.....	2	9	13	64	9	45%	Roseola Inf.	Rash
	4 d.	.....	1	.....	.....	8	15	73	13	34%	.....	Better
	6 d.	.....	3	.....	.....	7	10	75	5	41%	.....	Prac. well
10 yrs.	21 d.	.....	.....	.....	.....	28	26	40	6	51%	Miliary Tb.	Ill
	25 d.	.....	3	.....	.....	23	29	30	5	44%	.....	.....
	31 d.	.....	.....	.....	5	30	34	14	17	50%	.....	.....
	33 d.	.....	.....	.....	.....	50	35	13	2	58%	.....	Died in 2 d.
5 yrs.	3 d.	.....	.....	.....	6	41	25	23	5	65%	Measles	1 d. before rash
	5 d.	.....	4	.....	3	10	14	48	11	48%	.....	Rash
	10 d.	.....	5	.....	.....	7	30	52	6	18%	.....	Rash faded
2 yrs.	2 d.	.....	.....	2	19	25	21	25	8	67%	Ac. Tonsillitis	.....
	3 d.	.....	.....	.....	12	14	34	25	15	43%	Ac. Tonsillitis	.....
	4 d.	.....	.....	.....	9	14	29	39	9	54%	Ac. Tonsillitis	Less inflam.
	5 d.	.....	.....	.....	.....	19	41	35	5	31%	Otitis Media	Drum incis.
	6 d.	.....	2	.....	.....	8	24	64	2	25%	.....	Improved
18 mos.	12 d.	.....	6	.....	.....	13	47	27	6	21%	O. M. P. C.	Mastoiditis
10 yrs.	2 hrs.	.....	1	.....	9	21	50	17	2	37%	Ac. Appendicitis	.....
	24 hrs.	.....	1	.....	15	40	25	16	3	68%	.....	Improved
	2 d.	.....	1	.....	2	36	36	18	7	51%	.....	Worse
	10 d.	.....	3	.....	4	36	43	13	1	48%	Pelvic Inflam.	Worse
3½ yrs.	2 hrs.	.....	.....	.....	8	22	16	47	7	65%	Appen.	Operation
5 yrs.	1 d.	.....	1	.....	1	39	15	37	7	74%	Chickenpox	Not ill
8 yrs.	2 d.	.....	3	.....	.....	2	47	41	7	4%	Ac. Bronchitis	Ill
	4 d.	.....	.....	.....	.....	1	54	38	7	1%	.....	.....
	6 d.	.....	5	.....	.....	6	51	29	9	10%	.....	Well

SCHILLING DIFFERENTIAL BLOOD COUNT

Hemograms in Acute Infections of Childhood

Age	Period of Illness	Bas.	Eos.	Myel.	Juv.	Stab	Seg.	Lymh.	Mono.	Shift to left	Diagnosis	Remarks
V*		0–1	2–4	0	0–1	4–6	35–50	30–55	3–6	6–10%		
5 yrs.	60 d.	.....	2	.....	2	20	33	36	7	40%	.....	Appar. well
	63 d.	.....	.....	.....	3	24	38	30	5	41%	Ac. Pyuria	Sick
6 yrs.	12 d.	.....	1	.....	1	11	17	70	.....	41%	Whooping Cough	.....
2 yrs.	4 wks.	.....	3	.....	.....	14	7	70	6	66%	W. Cough & Measles	.....

V*-Average normal variation of differential counts during infancy and childhood

In order to study the different forms of "polys," better results can be obtained by use of Giemsa's stain. However, when time is a factor, it is possible to make a satisfactory differential count with modified Giemsa stain or with Wright's stain. According to Gradwohl,[3] Giemsa stain as made in this country is not stable, but that made by Hollborn, of Leipzig, is the best available. To properly stain a slide, it is best to spread across a grease free slide with a thin cover slip a small drop of blood. That procedure prevents marginal accumulation of "polys," and assures a more accurate count. After the blood dries, it is fixed with C. P. methyl alcohol for 3-5 minutes, and then the slide is placed vertically to dry. The next step is the preparation of fresh Giemsa stain. To each cubic centimeter of neutral distilled water, one drop of Giemsa stain is added. Each slide requires about 5-6 c.c. of water. This freshly prepared stain is placed on the fixed blood smear and is allowed to remain there for thirty minutes. Inasmuch as the Giemsa solution is aqueous, it does not evaporate. After the Giemsa solution has been drained off and the slide rinsed with neutral distilled water, the slide is placed vertically to dry; it is now ready for study. The modified Giemsa stain is made as follows: To each drop of undiluted Giemsa stain four drops of methyl alcohol are added. If this mixture is placed in an amber glass bottle it will retain its properties for about 2 weeks. The alcohol-Giemsa mixture is placed on a smear and allowed to remain for 1 minute; then neutral distilled water is added in the proportion of 2 drops to every drop of the alcohol-Giemsa mixture, and it is allowed to remain on the smear for 5 minutes, after which time the slide is rinsed with neutral distilled water.

A few cases illustrating different points will probably make the significance of the Schilling differential count more impressive, and will serve to remove any confusion.

Conclusions.

1. Much can be learned relative to diagnosis, prognosis and treatment by use of the Schilling hemogram.

2. The changes in the granulocytes often precede physical signs, symptoms, fever and total cell count changes.

3. Repeated hemograms carefully done reduce the need of total white counts which are often insignificant in comparison to the differential study.

4. The hemogram is sort of a kaleidoscopic view of the infection in the blood.

5. An outstanding blood picture should not be ignored because of the absence of clinical symptoms.[4]

6. The Schilling hemogram should replace the Ehrlich differential count.

7. The use of the Giemsa stain shows the granulocytes, lymphocytes and monocytes more clearly than Wright's stain, and should supplant the latter except in emergencies.

Bibliography

1. Schilling, Victor: The Blood Picture, St. Louis, C. V. Mosby Co., Ed. 7-8, 1929.

2. Rogatz, Julian L.: The Schilling Blood Count in the Prognosis of Acute Infections in Infancy and in Childhood, *A. J. Dis. Child.*, 40: 70-80, July, 1930.
3. Gradwohl, R. B. H.: The Schilling Blood Methods, *Long Island M. J.*, 24: May, 1930.
4. Allen, John D.: The Clinical Value of Schilling's Differential Blood Count in Pyogenic Infections, *Sou. M. J.*, 24:158-161, February, 1931.
5. Gerard, Jules H., and Boerner, Fred.: Nuclear Index in Disease, *J. Lab. and Clin. Med.*, 16: 306, December, 1930.
6. Reznikoff, Paul: Immature White Blood Cell Counts in Infectious Disease, *J. A. M. A.*, 93:963-966, September 28, 1929.
7. Bredeck, J. F.: Schilling Blood Differential Count in Tuberculosis, *Amer. Rev. of Tb.*, 20:52-78, July, 1929.

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ACROMEGALY SUCCEEDED BY HYPOPITUITARISM: REPORT OF A CASE.*

By E. L. COREY, A. B., PH. D.,
and
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An instance of acromegaly terminating in typical hypopituitarism has been studied in this laboratory. We believe the case to be unusual and hence of sufficient interest to warrant publication.

Grateful acknowledgment is made to Dr. C. C. Coleman, of Richmond, Va., through whose courtesy a complete compilation of the case history was made possible. The first portion of the history is quoted from his notes.[1]

Report of Case

History.—The patient, Miss L—, age 38, seen in January, 1925, first complained of failing eyesight in the right eye, and subsequently of severe periodic headache. The headaches had been present to a greater or less degree throughout life but had diminished in severity with time. Menstruation ceased at 21 years of age. At admission changes in bones of face were interpreted as being acromegalic. Sugar tolerance test was normal. The basal metabolic reading was —14 per cent. Other laboratory examinations were within normal limits. The Roentgen-ray examination of the skull showed a large pituitary fossa with destructive changes indicating an intra-sellar lesion with acromegalic changes in the facial bones. The patient was 5 ft. 10 in. in height and weighed 269 lbs.

An operation was performed by Dr. Coleman on May 25, 1925, and a large cyst was removed from the sella turcica containing 10 grams of a clear fluid. The pathological report at this time showed no gland tissue present, only the cyst wall remaining. On June 8th the patient was discharged from the hospital in excellent condition.

During the interval the patient married but there were no pregnancies.

Late in the afternoon of April 6, 1930, the patient, now 43 years of age, was admitted to the medical service at the University of Virginia Hospital. Due to the short time that she was in the hospital a complete examination, history, and the usual laboratory procedures were not made. Her mind seemed to wander considerably and her complaints were vague. She complained of various aches and pains over the entire body and a constant headache. For the past several years she had had edema of the extremities with some dyspnea and palpitation. The patient estimated her weight to be over 400 lbs., having gained from 80 to 100 lbs. within the last six months. Superficial examination at this time revealed a large obese white woman with acromegalic features and with heart, lungs, and abdomen within normal limits.

At 11:00 P. M. she complained of a severe pain in her left chest, examination of which revealed nothing abnormal. At 5:00 A. M. she became very cyanotic and respiration was difficult. Chest examination at this time revealed a marked pulmonary edema. In spite of the usual stimulants and oxygen administration, the cyanosis did not improve and respiration ceased at 9:00 A. M., the day following admission. The clinical diagnosis was acute edema of the lungs. The only laboratory tests made were a blood urea of 54 mgms. per 100 c.c. and a blood sugar of 50 mgms. per 100 c.c.

Necropsy.—The body is that of an extremely obese white woman about 5 ft. 11 in. in length. The face, especially the maxillary bones, is prominent. Edema of the lower extremities is present. About 4½ in. of fat are present in the subcutaneous tissues of the abdomen. Omental fat is abundant. The adrenals on section show the beginning of medullary liquefaction. The uterus is infantile, measuring 9 by 6 by 2 cm. and weighing 115 grams with tubes and ovaries attached. The ovaries are of normal size but are studded with small multiple cysts, there being from ten to twenty of these cysts on each ovary. The lungs are

*From the Laboratories of Pathology and Physiology, University of Virginia.
1. Dr. C. C. Coleman, Richmond, Va., personal communication.

edematous. The heart is hypertrophied and dilated and there is a relative tricuspid valvular insufficiency. The hypophysis is absent; the hypophyseal fossa is lined with a multicystic serous membrane, but in the lower portion of the fossa there is a small bit of tissue, 1 by ½ by ½ cm., red and granular. (Figure I.) Section of this bit of tissue is interpreted

Fig. I.—Fossa viewed from below showing location of adenoma (arrow).

as being an adenoma with amyloid degeneration and early calcification. (Figure II.) The hypophyseal stalk is missing but there is a slit-like fissure leading to the third ventricle. This latter is possibly an artifact produced at autopsy. The posterior part of the cerebellum bulges as if compression had jammed it down the foramen magnum and is interpreted as being a sign of increased intracranial pressure. Other findings are chronic passive congestion of liver, spleen and kidneys, mild chronic nephritis, myocardial fibrosis and calcification, pericardial effusion, mild arteriosclerosis, calcified apical tubercles, chronic cholecystitis and cholelithiasis.

Comment

The case appears to be of interest due to certain theoretical aspects involved. Fröhlich[2] first pointed out that dystrophia adiposogenitalis may follow pituitary tumor without acromegaly. Cushing[3] considers Fröhlich's syndrome to be due to anterior lobe deficiency. This view is most widely accepted today. Acromegaly, while attributed by its original describer, Marie,[4] to an absence of pituitary secretion, is now considered the result of adenoma of the anterior lobe of that gland. The present case is of interest as it presents an apparent instance of acromegaly with the hypophysis absent and a bit of adenomatous tissue in the base of the fossa. The symptoms of hypopituitarism might be expected, were it not for this adenoma.

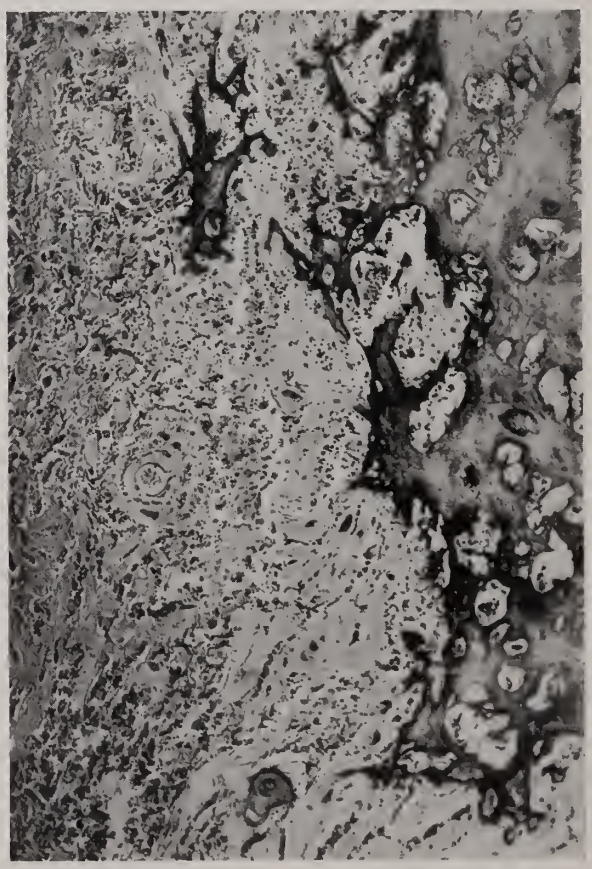

Fig. II.—Section of adenoma removed at necropsy.

No glandular tissue was removed at operation in 1925 nor was mention made of an hypertrophy of the anterior lobe. Since none

2. Frohlich, A. Wein. klin. Rundshau. 1901, Vol. 15, p. 883.
3. Cushing, H. The Pituitary Body and Its Disorders, Phil. 1912.
4. Marie, P. Revue de Med. 1885-86. Vol. 6, p. 297,
Vincent, Swale. Internal Secretion and the Ductless Glands. New York, 1925.

was found at necropsy we must assume that no hypertrophy was present. Yet this individual exhibited symptoms of acromegaly, quite similar to Marie's cases and is evidence to his supposition: that acromegaly is the result of hypopituitarism rather than hyperpituitarism.

Fröhlich considers degeneratio (dystrophia) adiposo-genitalis to result from pituitary tumor without acromegaly. The trend of modern opinion is that the condition is due to pituitary insufficiency. The present case is undoubtedly one of dystrophia adiposo-genitalis. The presence of acromegaly in the absence of the hypophysis cerebri, even though some adenomatous tissue was present, rapidly followed by hypopituitary symptoms, renders the present case unique. It appears plausible that both acromegaly and Fröhlich's syndrome were present at different times in the same individual.

Memorial Hospital.

TRICHOMONAS VAGINALIS VAGINITIS.*

By C. J. ANDREWS, M. D., F. A. C. S., Norfolk, Va.

The problem of abnormal vaginal discharge has received considerable attention during the past few years. Progress has been made as to our information regarding the nature of the causes and treatment. Until about twelve years ago we were dependent upon plastic surgical procedure and topical application for the treatment of those due to non-malignant causes. Cervical operations, which removed the infected portion of the cervix, removed the cause in those due to cervicitis; but comparatively few elected to have this done, and the treatment by local applications was an almost endless job. The use of the electric cautery, as described by Dickinson, met this need in most cases, and it is now seldom that operation is needed to cure leucorrhea. So successful was the cautery method that we had visions of curing all types of leucorrhea by its use, or some other diathermy method. In this we were greatly disappointed, and did encounter not infrequently a persistent distressing discharge which required topical application and, not knowing the true cause, this treatment was not always intelligently or successfully carried out.

In 1837, nearly one hundred years ago, Donne[1] described the motile protozoa known as the trichomonas. Dock[2] and Davis,[3] in 1896, found the organism in the vagina of one woman, but did not know that it had any clinical significance.

DeLee,[4] in 1920, published the first clinical paper on this subject. This paper, published in the *Illinois State Medical Journal*, did not apparently attract very much attention.

Greenhill,[5] on February 18, 1928, read a paper on this subject before the Chicago Gynecological Society. This paper, published in the *American Journal of Obstetrics and Gynecology* for December, 1928, described a type of vaginitis characterized by a creamy white or yellowish discharge, often associated with intense burning and itching, and in which he had invariably found the trichomonas vaginalis organism. He also described a method of treatment which had been successful in a large percentage of cases.

It is interesting to note that until 1928 observers had been about evenly divided as to the question of the pathogenicity of the trichomonas. Lynch,[6] in the *Journal of the A. M. A.* for September, 1922, Vol. 79, p. 1130, said—"There exists only circumstantial evidence of any harmful effects," and concludes that the trichomonas is harmless.

Several hundred cases have been reported in the literature during the past three years, and the evidence seems to be overwhelming that these organisms are responsible for this type of leucorrhea. It has been successfully cultured, and the effects of various antiseptics studied by C. H. Davis[3] and others. Blood serum is an important ingredient in the culture media.

There are still many things about this organism which we do not know, the principal one being its original focus and mode of transmission. It seems probable that they are identical with trichomonas intestinalis, but this is not definitely proven. The organism is easily killed by many antiseptics, but while relief may usually be obtained at once, a permanent cure is sometimes long deferred.

Although this subject has received considerable attention in the literature of the past three years, my experience would lead me to believe that it is not yet being widely recognized. This study is based on my own rather imper-

*Read by title before the sixty-second annual meeting of the Medical Society of Virginia, at Roanoke, Va., October 6-8, 1931.

fectly kept records of fifty private cases which I have treated.

Incidence.

These 50 cases were found in 1,439 vaginal examinations—or about one woman in 30 is found to be infected. I have treated about ten cases which were probably due to the trichomonas, but in which the organism could not be found. I have found it in no case in which there were no symptoms of vaginitis. Among this group of 1,439 women, 255 were diagnosed as cervicitis, or this was one of the leading features. This would tend to indicate that cervicitis as a cause of leucorrhea was about five times as frequent as trichomonas.

Age: The two youngest were both 18 years old, unmarried and virgins. The oldest was 49,—the ages being fairly distributed between these. It is evidently more common during menstrual life.

Marital: Thirty-six were married; 3 widows; 11 single. Twenty had given birth to children. Nineteen childless would suggest a possible association with sterility. Two of this number became pregnant soon after symptoms were relieved.

Symptoms.

Vaginal discharge was present in all; this in most cases was the characteristic creamy white or yellowish discharge, of bad odor. It contained numerous bubbles. The vaginal mucous membrane, particularly about the cervix, presented red macular areas. In some cases the surfaces were intensely red and granular. Many cases were less characteristic, but one's attention having once been called to this condition, the diagnosis can usually be made on inspection. A hanging drop slide is made for corroboration. The organism, being about the size of a pus cell, cannot be recognized in stained slides. The specimen is easily obtained with the platinum loop, and diluted by four or five loopfuls of saline solution on a cover glass and this placed on a hanging drop slide, and, when examined with the high power lens, shows numerous motile organisms, which have been accurately described by others. If the patient has recently had a douche the organism may not be found.

Burning and itching was complained of in 25 cases. Some of these were very severe and seriously interfered with the patient's rest, and consequently her health. Erosion was present in 30 cases. Evidently this is not an essential feature. These are the cases in which we were formerly disappointed with results of the cautery treatment, so far as leucorrhea was concerned.

Duration of symptoms: One said she had it all her life. Others ranged from 15 years to two weeks. Most were of long standing.

Urinary Tract Infection

Six of these women had urinary tract symptoms. I am inclined to think the number was larger, and that it is a fault of the record that this was not shown. I regret that I did not examine the urine for trichomonas in all cases.

Marchand, 1894, reported a case of cystitis in which the trichomonas was present in the urine. Lewis and Carroll[8] reported a case of bilateral pyelitis due to trichomonas. It has often been found in the urine.

Pregnancy

Three of my cases were pregnant. One was the most distressing case of vaginalis I have ever seen.

Previous Treatment

A few recent cases had no previous treatment. Many had cautery treatment; some douches of various kinds; while several had a "D & C," and in two cases complete hysterectomy had been advised after all other methods had failed. Davis reports several cases of trichomonas vaginalis vaginitis in which complete hysterectomy had been done previously for the cure of the condition. One had been treated for gonorrhea. The patient who gives a history of leucorrhea of long standing, and having had much treatment, will probably be found to have trichomonas vaginalis vaginitis.

Type of Treatment

Obviously it is necessary to apply the antiseptic to every point where the organism may be if success is to be accomplished. I followed the usual methods of vaginal applications through a vaginal speculum, and did not have great success. The knee-chest position was then tried, using a posterior vaginal retractor to expose the vaginal surfaces. By using a head mirror every point in the vaginal tract can be seen and treated. The whole surface of the vagina and vulva is scrubbed with green

soap applied by gauze on dressing forceps. The soap is removed by irrigation of sterile water, followed by bichloride of mercury, 1/1000, and this removed by sterile water. The cervix and vaginal tract is treated with 10 per cent silver nitrate, ½ ounce 25 per cent ichthyol and glycerine is injected in the vagina and a rosebud tampon inserted to protect the clothing and separate surfaces. The patient is advised to remove tampon the next morning and take ½ per cent lysol or cresolis compound douch. After 48 hours the same treatment is given except for the ichthyol and glycerine, which is omitted, and the vaginal tract dried and an alkaline powder blown in. These treatments are given on alternate treatment days; usually three treatments are given the first week. At this time the patient is usually completely comfortable—often for the first time in years. It is wise to warn her that recurrences are common after periods, and treatments must be given after periods for several months, or at any time any recurrence is noted. I have varied the treatment. In a few cases hexylresorcinol has been used instead of glycerine and ichthyol, and neosalvarsan has been used as a topical application. One case is now being treated by neosalvarsan intravenously. This patient has condylomata about the cervix, and has been difficult to cure. Mercurochrome has been used with fair results. I have instructed patients regarding the use of soap externally, which should be applied thoroughly and frequently, particularly after each bowel movement. No wash cloths are to be re-used without boiling. The douche should not be taken lying in a bathtub. A douche pan should be used, and the irrigating outfit boiled. I have instructed them to take a shower bath rather than a tub bath.

Four of my cases have been in two families; this would suggest the probability of contagion to other members of the family.

Duration of Treatment

Most of these cases have been treated during a period of from one to three months' duration. A few have been relieved at the end of one week, and I did not see them again. One was treated at intervals during twenty-six months. During this time she became pregnant and was delivered. I treated her as often as necessary during pregnancy to keep her comfortable. She has now had no symptoms for four months. Another patient who lives at some distance from Norfolk has had a number of recurrences, but always gets relief from one or two treatments. I then may not see her again for several months, when the trouble returns. Her trouble has been complicated by urinary tract infection, and I may yet find some source of infection there.

Results

All cases have been relieved. I do not know any standard by which I can determine definitely when a patient is cured, and recurrences are common, occurring probably from original unknown source. If the symptoms have been relieved, the discharge stopped, and the vaginal mucous membrane and cervix is normal, and no organism can be found several days after a douche, and no recurrence after three months, it seems reasonable to say that the patient is cured. Unfortunately we often do not see the patient at this time, as she is not having trouble and does not think it necessary to return.

Summary

A brief history of trichomonas vaginalis in relation to vaginal discharge is recalled. A few facts obtained from the observation, examination and treatment of 50 cases are presented. A method of treatment is described.

Conclusions

Trichomonas vaginalis is a rather frequent cause of a type of vaginitis, which is always troublesome, and at times extremely distressing to the patient. Before our present information was available, the treatment involved much futile effort, including at times mutilating operations. It may be diagnosed with accuracy and the condition relieved with a reasonable degree of satisfaction.

Bibliography

1. Donne: La Natur du Mucus, *Rech Microscop.*, Paris, 1837.
2. Dock: Trichomonas As a Parasite of Man, *American Journal Medical Science*, 111:1-22.
3. Davis: Leucorrhea, With Special Reference to Trichomonas Vaginalis, *Amer. Jour. Obstetricts and Gynecology*, 18:196.
4. DeLee: Trichomonas Vaginalis Vaginitis, *Illinois Med. Journal*, March, 1920.

5. Greenhill: Vaginal Discharge Due to Trichomonas Vaginalis, *Amer. Jour. Obstetricts and Gynecology*, 16:870.
Greenhill: Treatment of Trichomonas Vaginalis Vaginitis, *Journal A. M. A.*, 96:1862.
6. Lynch: Cultivation of Trichomonas, *Journal A. M. A.*, 79:1130.
7. Davis and Colwell: Trichomonas Vaginalis Donne—Preliminary Report on Experimental and Clinical Study, *J. A. M. A.*, 92:306.
8. Lewis and Carroll: A Case of Trichomonas Vaginalis, *Journal of Urology*, Vol. 19:337.
9. Bland, Goldstein and Weinrich: Vaginal Trichomoniasis in the Pregnant Woman, *J. A. M. A.*, 96:157.
10. Hegner: Trichomonas Vaginalis Donne, *American Journal of Hygiene*, 5:302.
11. Andrews: Trichomonas Vaginalis Donne, *Journal of Tropical Medicine*, 32:237.
12. Kleegman: Trichomonas Vaginalis Vaginitis, *S. G. and O.*, 51:552.
13. Kamperman: Trichomonas Vaginalis Vaginitis, Inter. Clinics, June, 1931.
14. Mathieu: Trichomonas Vaginalis, Cause of Vaginitis, *Northwest Medicine*, 29:15.

THE DIAGNOSIS AND TREATMENT OF THE MORE COMMON DISORDERS OF THE ANUS, RECTUM AND SIGMOID.

By B. F. DEAN, Jr., A. B., M. D., M. S. (Surg.), Washington, D. C.

The purposes of this paper are:

1. To present a satisfactory method of examining the anal canal, rectum and lower sigmoid colon.

2. To mention briefly those conditions which may be diagnosed by such an examination, and

3. To outline in a general way the treatment of some of the commoner ailments.

I have intentionally limited this paper to a discussion of the diagnostic possibilities of proctoscopy and the treatment of the so-called minor proctological conditions, omitting the congenital defects and malignancies which would lead to a discussion of many major surgical procedures.

Preparation for the examination is best done by the patient himself. The following routine instructions, if carried out, lead to uniformly good results:

1. No supper the night before examination;
2. Usual breakfast the next morning;
3. Warm water enemas until the returns are clear, just before reporting for examination.

The equipment necessary for a complete examination is very simple. It consists of a lighted sigmoidoscope, finger cot and lubricant. A table by means of which the patient may comfortably be put in a suitable position is very desirable but not absolutely essential.

The reverse Trendelenburg position is the position of choice for examination. It is reasonably comfortable for the patient, convenient for the examiner, and the bowel distends itself so that the examination can usually be carried out without pumping the bowel full of air. Thus, gas pains following the examination are minimized. With the patient in this position, the anal canal up to the dentate margin may be readily observed by merely spreading the buttocks apart. Next, a digital examination reveals the length and the direction of the anal canal and locates any tumor mass that may be low down in the rectum. Following this, the sigmoidoscope is introduced through the anal canal. With a little experience one can readily tell when the instrument has passed the sphincters. The obturator is then withdrawn and the examination completed by means of direct observation. The bowel is angulated at the recto-sigmoid junction, and in approximately 20 per cent of the cases it is not possible to pass an instrument above this point. In most cases, however, the scope may be passed into the sigmoid without difficulty and without discomfort to the patient. Specimens for diagnosis may be removed without pain, as there is very little pain sensation above the muco-cutaneous junction.

Other essentials of a successful examination are the cooperation of the patient and gentleness on the part of the examiner. The patient's cooperation is best obtained by explaining just what sensations he may expect during the examination and by being slow and gentle. It is not impossible to push a proctoscope through the bowel wall if proper care is not exercised.

The commoner condition encountered during the routine examination of patients with symptoms referable to the colon are:

1. Chronic ulcerative colitis.
2. Syphilitic ulceration of the rectum,—usually with stricture formation.
3. Factitious ulcers.
4. Amoebic ulcerations.
5. Tuberculous ulcerations.
6. Diverticulitis.
7. Polyps.
8. Carcinoma.

The common ailments about the anus, viz.: hemorrhoids, fissures, abscesses and fistulae do

not offer much of a diagnostic problem, but it is in those patients who have a very obvious local lesion that we should carefully examine the bowel above to avoid neglecting a condition that might be much more serious than a hemorrhoid or a fistula.

Chronic ulcerative colitis may be diagnosed almost exclusively by means of the proctoscope because in about 90 per cent of the cases the disease begins in the rectum and extends upward. The appearance of the mucosa is characteristic,—there are pin-point ulcers, the mucosa bleeds freely, and, if the condition has been present for a long time, as is often the case, there is a marked narrowing of the lumen of the bowel due to scar tissue formation. Cultures from these ulcers will almost invariably reveal the gram positive diplo-streptococcus of Bargen. X-ray study of the colon following a barium enema is helpful in confirming the diagnosis in those cases in which the disease is above the reach of the sigmoidoscope. The treatment consists of removal of the foci of infection, non-irritating diet, an autogenous vaccine and bacterial filtrate. Rarely a fulminating case is seen which will not yield to the usual treatment and an ileostomy is indicated.

Amoebic ulcers are most often seen involving the valve edges. They appear as umbilicated ulcers about 2-4 mm. in diameter. Amoebae may be found in great quantities in a fresh section from one of these ulcers when repeated stool examinations have been negative. The ulcers clear up in about ten days after beginning treatment for amoebiasis.

Luetic ulcers may be single or multiple. They begin as gummata in the submucosa, but, due to trauma, soon break down and ulcerate. They yield very readily to anti-luetic treatment, but if the treatment is neglected there is a marked tendency to stricture formation.

Factitious ulcers are usually seen on the anterior wall of the rectum following radium treatments for carcinoma of the cervix. They appear as flat ulcers with a dirty gray base and are usually about 4-6 centimeters in diameter. They are very resistant to treatment but can almost always be cleared up, after many months, by cleansing irrigations and local applications of various antiseptics to minimize secondary infection.

Tuberculosis of the rectum is a rather rare condition. It resembles syphilitic ulceration, the differential diagnosis being made by finding the causative organism on direct smears.

Diverticulitis of the sigmoid may occasionally be diagnosed by means of the proctoscope. When once seen, the appearance of the inflamed opening is quite characteristic.

Polyps are quite characteristic in appearance. When found, their removal, either by fulguration or surgical excision, should always be advised because it has been shown that they are unquestionably pre-cancerous lesions.

Hemorrhoids are either internal or external, the former being covered with mucous membrane, and the latter with skin. The diagnosis of external hemorrhoids is easily made from observation. Internal hemorrhoids, unless prolapsed, can be diagnosed only by means of an internal examination. It is important to make this differentiation because of the difference in the treatment of the two. Symptoms from external hemorrhoids are practically always due to a subcutaneous hemorrhage which gives rise to an acute painful swelling. The pain can be relieved very promptly by excising the top of the hemorrhoid and extruding the clot under local anesthesia. No relaxation of the sphincter is necessary for this procedure, which can easily be done in the office. If untreated, these thrombosed hemorrhoids either ulcerate and allow the clot to escape or gradually subside, leaving a skin tag.

Internal hemorrhoids are treated by electrocoagulation, fulguration, injection of various chemical irritants and by surgical removal. Late bleeding is not uncommon after electrical treatment. This is also true of the old clamp and cautery method of removing hemorrhoids. In selected, uncomplicated cases of internal hemorrhoids, the injection treatment yields very satisfactory results. It is easily carried out in the office, is painless and does not entail loss of time from work. I have found phenol 5 per cent in oil to give good results, and have not seen any sloughs following its use. On the other hand, quinine and urethane, cause sloughing of the hemorrhoid not infrequently. Those cases which are complicated by fissure, marked prolapse, ulceration and old thrombosis are best treated, I think, by some method of ligation and excision.

Anal fissure, or irritable ulcer, which is a more suitable name, is a not infrequent complication of hemorrhoids. The symptoms of

a fissure are rather characteristic. First, there is a burning sensation during defecation. This is followed by severe pain and spasm of the sphincter. There is no other condition about the anus which causes such severe pain as an acute fissure. The diagnosis of a fissure is easily made by inspecting the anus. It appears as a pinched out ulcer in the skin just distal to the dentate margin. In about 90 per cent of the cases they are in the mid-line, posteriorly. Many methods of treatment are described, any of which may effect a cure in an isolated case, but none of which will cure all cases. Among these methods are: divulsion, incision of the sphincter, cauterization of the ulcer with silver nitrate, fulguration, sub-mucous myotomy, etc. Buie has described an operation which I have found very satisfactory. It consists of excision of the quadrant of the anus containing the fissure. The excision is carried out on the skin in a fan-shaped manner so as to leave a broad flat wound. I have never seen a failure following this operation.

The next most common surgical lesion of the anus and rectum is abscess formation. These abscesses practically always begin in an infected anal crypt, the infection spreading out into the peri-anal tissue or the ischio-rectal space. The proper method of draining these abscesses is wide incision over the abscess proper, plus incision through the internal opening. If this is done and the wound allowed to heal by granulation, a fistula will not follow. If, however, just an incision is made over the abscess, a fistula almost always results.

About 95 per cent of fistulae follow abscesses. The other 5 per cent occur as a complication of ulcerative colitis, tuberculosis, syphilis and occasionally cancer. I like to think of fistulae as tunnels of infection and the treatment consists of excision of the fistulous tract, or, when this is not feasible, incision of the tract, followed by removal of all infected granulation tissue with a curet. These wounds should be packed lightly for forty-eight to seventy-two hours and then observed and dressed daily until a solid block of scar tissue replaces the excised area. The important point in opening a fistula is to incise through the internal opening which is always originally located at the dentate margin.

To my mind, the post-operative treatment of surgical wounds about the anal canal is almost as important as the operation itself. These wounds are, of course, all infected, but by daily cleansing of the wound this infection will be kept at a minimum and the resulting scar tissue minimized. It is only by such after-treatment that satisfactory results may be obtained in radical operations about the anus.

815 *Connecticut Avenue.*

THE TUBERCULOSIS OUT-PATIENT SERVICE OF THE STATE.*

By ROY K. FLANNAGAN, M. D., Richmond, Va.

Assistant State Health Commissioner, and Director of Tuberculosis Out-Patient Service.

Aid to Diagnosis.—The Tuberculosis Out-Patient Service of the State Health Department, so long and so ably administered by Miss Agnes D. Randolph, has, since her death, been placed under my direction. I take this occasion to thank the medical profession of Virginia for the splendid support they have given this work and to assure them that the Service will continue to function as a diagnostic aid to the doctors and in cooperation with them. I am pleased at this opportunity to tell the members of this Society how this Service operates and how it can well serve the physicians while acting as a public health agency of undoubted value. To many of you the work is known and appreciated. To others, less well informed perhaps, its value to the profession at least may have seemed problematical. In any event, every doctor should know what the Service is trying to do and how it is doing it.

Three Approaches.—In the first place, the Service is a *case-finding agency;* that is, it is an attempt on the part of the State to discover the whereabouts of all cases of tuberculosis, and, thereafter, to do what is possible to keep the disease from spreading. Secondly, it endeavors to bring to bear home and community agencies, family, medical, and social, to insure as complete segregation and instruction of the cases found as possible, in sanatoria if practicable, but, if this cannot be done, then such home care as circumstances render possible. And, thirdly, we furnish periodic visiting nurse service to these cases in an endeavor to get them to carry out the doctors' orders.

Responsibility for Cure.—The cure of the

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cases we consider to be a medical matter pure and simple. The patient is first the physician's responsibility, for a doctor must sign the application of the patient to a sanatorium whether he has previously known of this case or not, if the patient is to go; and then, when the patient goes, he shifts that responsibility to the medical attendants at the sanatorium just as he does any medical or surgical case sent to a hospital. With this medical aspect of the matter the Service has nothing to do, though it operates in close cooperation with the doctor and with the sanatoria, and does all in its power to aid the physician to secure prompt hospitalization for his tuberculosis patients, and keeps track of them when they return.

Clinic Units.—The machinery for doing this field work consists of two clinic units, each with a competent diagnostician, a public health nurse, and a clerk. In addition to these units, which divide the State between them, there is a travelling X-ray truck and technician, which is assigned for six months of the year, for one week stands, with each of the clinicians. The State is divided into eleven (11) districts, to each of which is assigned a nurse. The tuberculosis nurse, for a week or more in advance of the clinic, and for as long thereafter as may be necessary, visits the homes to which local physicians refer her, where open cases are known to be, in an endeavor to bring contacts to the clinic, and, following the clinic, secure the cooperation of the patient's family to get the best disposition possible made of the case, and the family protected and instructed to the limit of her power.

Medical Invitation.—The clinic comes to a county only on invitation of the local board of health and with the assurance of cooperation on the part of the doctors, and the nurse visits in the homes of those to whom the doctor refers her and the homes in which there is record of death from tuberculosis. Cases of known tuberculosis are not examined by our clinicians. The local physician's diagnosis is sufficient for our registry.

The schedule of these clinics is made up a year in advance, and the clinic units are assigned to different localities one to six times yearly,—first, on the basis of the need for them as shown by death rates, and, second, on the communities' ability to utilize them to advantage.

Child Diagnosis.—The X-ray outfit was installed for the purpose of making diagnosis in children in connection with the use of the tuberculin intradermal test. It is generally accepted as true that at least 50 per cent of adult tuberculosis is contracted in childhood and that chest examinations alone of children are useless for diagnosis of tuberculosis; and so, during the week of the X-ray clinic from lists furnished by the doctors and with the written consent of parents and guardians, the nurse brings fifty children or thereabouts to the clinician for testing with tuberculin.

Diagnostic Schedule.—This testing takes up most of Monday. On Tuesday the clinician holds a limited consultation clinic with neighborhood physicians in regard to doubtful cases in their practice, and suspicious adults found are X-rayed at the physician's written request. The clinician also, if time permits, examines the chests of such other cases as may present themselves on this day. Thirty chest cases daily is a fair maximum for any chest specialist.

The X-Ray Outfit.—In the meantime, the X-ray man has arrived and set up his machine, plugging it in on the local current (110 voltage, A. C.). On Wednesday the tested children return for reading of the test and the positive ones are immediately X-rayed, the clinician reading the plates. Those who show up negative are tested again and asked to return on Friday. On Thursday another consultation and diagnostic clinic is held, as on Tuesday. On Friday the final reading and X-raying of children takes place. A charge of $1.00 per X-ray film is made. Two stereo films are necessary. It is a part of the nurse's duties to secure in advance from some community organization a pledge for the payment for such films as cannot be paid for by poor people.

Protection to X-Ray Specialist.—In order to prevent this exceedingly low price per film adversely affecting those physicians who possess X-ray apparatus, the rule has been adopted not to set up our X-ray machine within twenty miles of a commercial X-ray unless the owner of the local machine invites us. The invitations for this service by such men are getting to be the rule rather than the exception. In a number of places, however, the X-ray work is being done by the local X-ray physicians on a basis satisfactory to all par-

ties. It is probably true that occasional State X-ray clinics are conducive to a more general demand on the part of the public for X-ray examinations in diagnosis.

Office Detail.—The office work necessary to keep this Service going smoothly is considerable, taking the time of three office workers. Copies of the clinic records in duplicate and sometimes triplicate are made. The office must have the original; the health officer, if any, must have a copy; the doctor must be notified; and the nurse must have such data in regard to the case as may enable her to advise the family intelligently. Supplies for the clinics, the X-ray machine, and for the nurses, must be ready and are immediately sent out on demand. Statistical information must be kept on tap, and letters regarding the work (and their name is legion) must be promptly answered. Nurses must be supervised and their coded weekly reports tabulated and filed.

This Service has been built up gradually during the past ten years in accordance with definite need and specific demand, and is having an appreciable effect in the combination of medical and public health factors that are bringing about the reduction of the death rate from the disease—tuberculosis.

RAMBLING THOUGHTS ABOUT WHISKEY AND DRUG ADDICTION.*

By W. C. ASHWORTH, M. D., Greensboro, N. C.
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I am sure that you do not care to hear any nebulous theories about scientific medicine in the presence of such oppressive heat, which, in spite of our most heroic efforts to the contrary, tends to produce more or less mental and physical inertia. The prolonged heat, which is universal and enervating, tends to make us all desire to follow in the line of least resistance. I am no exception to the rule; threfore, my remarks will, of necessity, be more or less rambling and unscientific.

I have selected as my subject a few "rambling thoughts" about the treatment of habit cases—alcoholic and drug. Of course, the brief time allotted to me will prevent me from giving any definite information; therefore, the subject will only be scanned, and tedious elaboration will be religiously avoided.

First aid for the alcoholic who enters our Institution consists of sufficient alcoholic stimulation to establish confidence of the patient, and promotes a feeling of well-being and good fellowship. The medicinal part of the treatment consists of ample purgation, nerve sedatives, and the judicious use of such drugs as will not be followed by an unpleasant "hang over" the following morning.

We have ascertained that trional is one of the safest hypnotics, although paraldehyde is used in selected cases, especially when delirium is threatened. The following morning, a saline laxative is selected, in order that satisfactory elimination may be obtained. After free elimination, a strong tonic course of medicine consisting of cinchona, gentian, nux vomica, etc., is administered, and such other remedies as pilocarpine and apomorphine as will best tend to obliterate the craving for alcoholic stimulation. With the judicious use of these remedies, the consuming and insatiable craving for alcohol is soon obliterated; therefore, if the patient relapses, it will be of his own volition, rather than from any actual desire for artificial stimulation.

The period of time required for the cure of the average alcoholic patient varies from three to four weeks, depending upon the length of addiction, amount of alcohol consumed, condition of patient, etc.

We regard each alcoholic case as a problem unto itself; therefore, no inflexible, standardized method of treatment is used. In the treatment of alcoholic cases, the whiskey is tentatively withdrawn, in order that the nervous system of the patient may not be unduly shocked on account of the sudden deprivation of the accustomed amount of alcoholic stimulation.

We have often stated and observed that free elimination is the golden thread which runs through the successful treatment of alcoholic cases; therefore, electric and hydrotherapeutic measures are advised and frequently used. We also reckon with the advantage of psychotherapy. A sincere desire of the patient to be cured is equivalent to his full cooperation, which is *sine qua non* in the successful treatment of alcoholic cases. Of course, complications must be met with appropriate remedies, and a radical departure from the treatment previously outlined is often necessary. We must not lose sight of the fact that a large number of alcoholic patients suffer from various complicating diseases; therefore, a treat-

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ment for the habit *per se* would be a grave mistake, and would not be productive of satisfactory results.

The amount of alcohol administered to the average patient is based upon the tolerance of the patient which tolerance is established by the presence of anti-bodies in the system. For instance, we have observed that an alcoholic with unusual tolerance may drink a quart or more whiskey daily, with seeming impunity, The patient with limited tolerance, or a limited number of anti-bodies, however, would be inebriated by the same amount of whiskey, and mentally and physically incompetent in every respect. In other words, each case is a problem unto itself, and the successful treatment, therefore, is individual.

In reference to a narcotic drug patient, it might be said that he is also *sui generis;* therefore is likewise an individual problem. We cannot obtain satisfactory results from any inflexible, stabilized method of treatment; therefore, we must again consider the personal equation, temperament and idiosyncrasies of the patient. A tentative reduction, coincident with the administration of reconstructive nerve tonics and such substitutes as will best enable the patient to abandon the drug with only a negligible amount of discomfort, is indicated. The reduction should be very tentative, but systemic conditions should be met and the nervous system of the patient supported with appropriate stimulation, etc.

We have no specifics for drug addiction, but common sense and a thorough knowledge of drugs should dominate the treatment. The Lambert treatment was heralded a few years ago as a specific, but, after an extended investigation, we found that it was only helpful since the therapeutic drugs contained in the Lambert mixture are diametrically opposed to the actions of morphine and its derivities. It is obvious, however, that the Lambert mixture cannot be regarded as a specific in any sense of the word. The original Lambert treatment implied very severe purgation and a rather abrupt termination of all opiates at the end of the fourth day. We have modified the Lambert treatment by supplanting the morphine with pantopon when the former drug is reduced to a daily dosage of one grain. We have found that pantopon stabilizes and quiets the nervous system over a longer period of time than morphine, and does not produce the pleasurable stimulation or euphoria which follows in the wake of the administration of morphine. We continue to administer pantopon until the nervous system of the patient is tranquilized, and then supplant the pantopon with codeine until the withdrawal symptoms are fully under control.

The transition from morphine to pantopon and from pantopon to codeine is comparatively easy for the patient, and we believe the most humane and satisfactory treatment for the morphine habit.

We are fully cognizant of the fact that a number of remedies have been exploited as specifics for the morphine habit, but "tincture of time" has relieved the fallacy of such exploitations. Narcosan and lipoidal substance were exploited by Horowitz as specifics, and the profession was gullible for a short period of time, but soon woke up to the fact that these exploited preparations were for commercial reasons rather than curative measures.

Some years ago an ex-army medical authority wrote very voluminously on the cure of the morphine habit by the combination of eserin and pilocarpine. In fact, the doctor was so confident that he had discovered a positive and satisfactory cure for the habit that, at great expense, he leased a large hotel, gorgeously furnished at Briar Cliff, N. Y., with the full expectation of filling it with drug patients and obtaining cures which were not attended with the much dreaded, painful withdrawal symptoms. The doctor's venture, however, failed, and financially he was a bankrupt.

Scopolamine and hyoscine (twilight sleep) have also been exploited as a specific for the morphine habit. We have, after careful and painstaking investigation, found out, however, that hyoscine is very uncertain and dangerous, and the fatalities following in the wake of the hyoscine treatment have been alarming, therefore, the use of this drug is always associated with great fear and trepidation.

Dr. Petty, of Memphis, Tenn., was an ardent advocate of the hyoscine method of treatment, and wrote voluminously and learnedly on the subject, but I am reliably informed that sometime before his death, he discontinued the use of hyoscine in the treatment of his morphine habitues.

So much for the various treatments which have been in vogue from almost time im-

memorial. The Chinese, who perhaps comprise the largest number of morphine and opium habitues, also have been acutely disappointed by the use of various so-called cures which have been exploited by reputable, but misguided, members of the medical profession of China.

Suffice it to say that I might stretch this subject of the treatment of morphine to an interminable length, but I do not think it will be of interest to members of this Society. I hope, however, that these few rambling remarks will serve to stimulate the interest of the profession on a subject which is confronting various conferences in Europe as well as America.

Hon. Richard P. Hobson deserves unstinted credit for his untiring efforts in this country, as evidenced by the large number of world-wide conferences from time to time.

In conclusion, I wish to state that the physician who expects to treat alcoholic and drug habitues successfully must be temperamentally fitted for the job. He must have a large measure of human sympathy and a personality which will tend to inspire the full confidence of his patient. The following verse exemplifies better than I can express the above statement:

"'Tis the human touch in this world that counts,
The touch of your hand and mine,
Which means far more to the fainting heart,
Than shelter and bread and wine.
For shelter is gone when the night is o'er,
And bread lasts only a day,
But the touch of the hand, and the sound of the voice,
Sings on in the soul always."

SOME LESS COMMON DISEASES OF THE UPPER RESPIRATORY TRACT.*

By FREDERICK W. SHAW, M. D., Richmond, Va.
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For an address to an audience made up of physicians and dentists, I believe that a discussion of a few of the less common ailments affecting the regions where both parties work would probably retain the interest of each. I have, therefore, selected the following: Hyperkeratosis Linguae, Nasal Myiasis, Noma and Moniliasis.†

Hyperkeratosis Linguae

Hyperkeratosis linguae is a comparatively rare disease. It is characterized, clinically, by yellowish, blackish or bluish discoloration of the affected areas, in which the filiform papillae of the tongue become elongated, the elongations giving the lesion a hairy appearance. A few cases have been reported without elongations. The area of the disease is in front of the circumvallate papillae forward toward the tip of the tongue and extends peripherally.

Illustrative case:[1] Patient was a male, age 79 years. When first seen he complained of being very thirsty and of having a sweetish taste in his mouth, and that his mouth felt dry and his tongue thick. This condition, he told me, had been noticeable for about two weeks.

On examination, a black hairy-looking coating was seen to be occupying the central part of the tongue from the circumvallate papillae to within one inch of the tip. The area tapered forward from the position in front of the circumvallate papillae, the width at that point being approximately one and one-half inches. The border was well-defined, and extending from this was a narrow area of a yellowish color with a narrow grayish margin, with but a very slight elongation of the papillae. The tongue beneath the lesion appeared to be thickened about one-sixteenth of an inch. The tongue was not dry; the prolongations were so moist that they appeared slimy. The remainder of the tongue and mouth was normal.

With the aid of a probe the hair-like processes could be lifted erect, and in this position showed a more remarkable likeness to hair; they resembled the hair of eye-lashes. By different authors their appearance has been likened to long tendrils, lashes, sea-weed, or hairs. They resemble the latter so much that they were at one time suspected of being true hairy growths, and received the term "hairy tongue."

The papillae could be removed readily by scraping lightly. The individual papilla had a dark brown color, were tapering, and varied from one-eighth to five-eighths of an inch in length.

The malady began to disappear about a week after the patient was first seen, making the time about three weeks from the onset, and was practically absent in a fortnight. The disappearance began with a change of color from black to yellow, and was by exfoliation. No treatment was applied.

*Read before a joint meeting of the Richmond Academy of Medicine and the Richmond Dental Society, at Richmond, Va., November 26, 1929.

†A discussion of the genus Monilia and of Bronchomoniliasis appeared in the **Virginia Medical Monthly** at a previous date.

The etiology of this disease is obscure. Numerous microorganisms have been described as the cause, but their connection with the disease has not been established.

Nasal Myiasis

The accidental invasion of the body cavities and of the skin by larvae of the Diptera is known as myiasis.

The larvae of the Chrysomyia (Compsomyia) macellaria, the screw-worm, has been found in the nose, in wounds, and in the vagina after delivery.

As an illustration of nasal myiasis, the following case is presented:[2] When first seen, the patient complained of epistaxis, frontal headache and exhaustion. He stated that he had had attacks of nose bleed at various times. Physical examination showed oedema of the lower eyelids, with redness and swelling of the nasal mucous membrane on the left side, and a bloody discharge. The second day the epistaxis continued, and the discharge had a very offensive odor; the oedema of the lower lids was aggravated and their color was purple. The patient became unconscious during the early part of the afternoon.

The larvae were first noticed in the early morning of the third day. They were present in great numbers and came from the nose and mouth. Examination of the mouth showed large numbers of them crawling from the throat, to which place they had migrated from the nasal cavity. These larvae were a very light pink, almost white in color, 19 m.m. in length, with blunt anal end, tapering to the head; had 12 segments, each with circles of minute spines, and the head was a metallic green.

One hundred-fifty of the larvae were collected and placed in a jar containing a piece of raw beef. The jar was covered with mosquito netting to keep other flies out of the jar.

Two days later the collected larvae were placed in a screened box containing moist earth and horse manure in one section, and moist earth only in the other, meeting in the center of the box, but there was no partition between the two. The depth of this was 75 m.m. The larvae immediately burrowed into all parts of the contents of the box, showing no preference to either side. The box was then placed in a shed with no windows to limit the evaporation of the moisture from the contents.

Some of the pupae were removed from the box on the sixth day. They were 12 m.m. in length, and had a dark brown shell. The rings were more sharply defined than in the larvae, the number of rings corresponding to the number of segments in the larvae.

The first flies appeared twelve days after the larvae were placed in the box, and on the thirteenth day about seventy-five were present. These flies averaged 1 cm. in length, had a russet head, an iridescent metallic green thorax and abdomen, and three longitudinal black stripes on the dorsal surface of the thorax. They were classified as the Chrysomyia macellaria.

The patient died on the fourth day after he was first seen. Postmortem revealed that the larvae had penetrated the cribriform plate of the ethmoid.

Chloroform was applied to the affected parts as soon as the first larvae appeared, but apparently it was impossible to get the chloroform in contact with a large number of the parasites.

Noma

Noma, or gangrenous stomatitis, is an affection characterized by a rapidly progressing gangrene, starting on the gums or cheek, and leading to extensive sloughing and destruction of tissue. The report of a typical case[3] of this terrible, but fortunately rare, disease will serve as an illustration:

The patient was a boy 13 years of age, and was probably in the second week of typhoid fever. The temperature ranged from 103° F. to 105° F. The pulse was about 130 and slightly dicrotic. He showed evidences of profound intoxication. On the third day he became comatose, showed some evidences of nervous irritation and some subsultus tendinae. Bowel movements and urination were involuntary. During the next ten days the fever declined, but the urine became scanty and the delirium more pronounced.

On the nineteenth day after he was first seen, the face appeared to be puffed on both sides, and on the following day the right cheek was considerably larger, distinctly indurated and pink in color. On the twenty-first day the cheek was more swollen, harder, a deeper red and slightly glossy. On the twenty-second day a light brown patch appeared, which rapidly became darker and finally black. The characteristic offensive odor of the breath was

well marked. Several yellowish spots appeared on the surface. As the black spot had a boggy feeling, it was opened and a dark brown fluid, with a flocculent precipitate, escaped. The gangrenous portion extended rapidly; the patient became more comatose, and died on the twenty-sixth day after he was first seen.

Stained slides were prepared from the necrotic tissue and, together with numerous bacteria, some gram-negative thread-like forms were noted. The organism resembled bacillus necrophorus, morphologically, and a suitable culture medium was prepared for its cultivation. It was found to be anaerobic.

Two pieces of tissue were removed from the inside of the cheek at the junction of the healthy and necrotic tissues. Sections were made from these and stained. The stained preparations showed the beaded, thread-like organism resembling the bacillus necrophorus[4] in large numbers at the junction of the healthy tissue. Areas of coagulation necrosis were seen.

No attempt was made in this case to isolate the organism referred to. Several references to an organism similar to the one noted here may be found in the literature, and it is probable that the bacillus necrophorus is the etiological factor.

Moniliasis

Infections of the mouth by Monilia albicans are quite common in children and constitute the disease known as thrush. Infections of the tongue by species of the genus Monilia are quite rare. Cases are on record of chronic ulceration with thickening of the tongue in the scrapings of which yeast-like bodies are seen in great numbers. On cultivation these yeast-like bodies proved to be monilias. I recently had such a case in a girl 10 years of age. The condition was of about one year's standing.

References

1. Shaw: *Jour. Kans. Med. Soc.*, X, 122, 1910.
2. Shaw: *The Military Surgeon*, Dec., 1919.
3. Campbell and Shaw: *Jour. Kans. Med. Soc.*, XI, 77, 1911.
4. Shaw: *Bull. Med. Coll. Va.*, Mar., 1925.

HOW FAR WILL A MALINGERER GO?—A CASE REPORT.*

By E. P. TOMPKINS, M. D., Lexington, Va.

Wm. McD., a plumber, has a wife who is probably possessed of a sharp tongue. He developed a defense mechanism of peculiar type. In order to gain his wife's pity instead of her revilings—which were probably justified by the husband's habits with regard to alcoholic stimulants,—he began having seizures of a certain sort. He feigned attacks of kidney colic. He would be seized with one of these attacks at all sorts of odd times, while at work or while off duty, while at home or while visiting, miles in the country. As far as ascertained, he never had any in the night after bed-time. He would writhe and twist and moan, lying on the floor, or brick pavement, or in his bed. He would compress his throat with his hands, and apparently become semi-conscious. Nearly all the physicians in town, at one time or another, had been called to attend him in these attacks. At first hypodermics of morphine were given; later he was given only hypodermics of plain water. One sort of "hypo." relieved him as well and as quickly as another. In fact, it was the rapidity of his relief which first gave an inkling of his malingering. Within one or two minutes after the needle had entered his arm the attack would be over.

The lengths to which he went in this malingering were remarkable. He was asked if he had ever passed any kidney stones (gravel). His reply was that he had passed a number of them. He was requested to bring the next one for examination, so one day he walked up to the home of one of the physicians, and handed him a paper in which was a tiny particle of mineral matter. The most casual glance showed it to be a bit of limestone which he had picked up in the walkway. His frequent repetitions of these seizures evidently convinced him (though not his doctors) that he really had some organic kidney trouble, and he journeyed to a distant city, and there induced a surgeon to operate upon him. After a stay in the hospital he returned home, and, when asked if the surgeon found anything wrong with the kidney, he answered that no trouble was found.

The climax of his case came, however, when he staged an attempted suicide. While at work with other men laying a pipe line, he walked a few steps from them, but in plain sight, pulled out a revolver which he had bought that morning, but had not paid for, and, using his *left* hand, though he is a *right-handed* man, he shot himself through the *right* shoulder. He was evidently afraid to

*Read before the sixty-second annual meeting of the Medical Society of Virginia, at Roanoke, Va., October 6-8, 1931.

shoot himself on the left side, that being near his heart, but concluded that a bullet through the muscles of the shoulder would not entail serious danger. Nevertheless, he had not calculated upon the presence of the large axillary blood vessels, and, in consequence, the bullet almost completely severed the axillary artery. He fell to the ground with blood spurting, and a hurry call was sent out for doctors. Before their arrival he was placed in a car, and rushed to the hospital. Here quick work by the surgeon stopped the flow of blood, and the artery was tied. Blood transfusions helped his recovery, which seemed to be complete in more ways than one, as he has had no more seizures, and for several years has been continuing soberly at work.

AN ANALYSIS OF THE CESAREAN SECTIONS DONE AT COLUMBIA HOSPITAL, WASHINGTON, D. C., 1920—1930*

By JOSEPH J. MUNDELL, M. D., Washington, D. C.

The laity if not indeed the profession generally regard Cesarean section lightly even in spite of periodic reports in the current literature. Therefore, an inventory such as this is of practical value in freshening our memory that Cesarean is attended with danger, and should not be undertaken without due consideration. A ratio of one Cesarean to sixty-one deliveries, as in this report, is much too frequent.

Total number of Cesareans	228
Total number of deliveries	13,986
Ratio	1 to 61

Gross percentages 228 cases:

Deaths, 17	7.45%
Infection, 67	29.39%
Stillbirths, 15	6.53%

Elective Operations

89 cases—Deaths 4	4.49%
Infections 19	21.34
Operation during first 24 hours of labor.	
77 cases—Deaths 6	7.79%
Infections 25	32.46
Operation after 24 hours of labor.	
52 cases—Deaths 7	13 46%
Infections 23	44.23

Cesarean for Eclampsia

15 cases—Deaths 3	20. %
Infections 8	53.33

Comparison With Other Reports

	Number Cases	Mortality
Johns Hopkins	183	5.46%
State of Massachusetts	1,161	8.08
Bride	648	7.07
Detroit, 1925	154	13.
New Orleans, 1926	291	16.01
Polak	196	4.08
A collection of 11 different reports	3,174	10.36
Columbia Hospital	228	7.45

Comparison With Other Puerperal Deaths

Columbia Hospital general puerperal death rate	0.56%
Census Bureau general puerperal death rate, 1926	0.66
Cesarean sections, Columbia Hospital	7.45

Comparison With Death Rate From Acute Appendicitis

U. S. Navy, ten years, 12,000 cases	1.5 %
Cesarean sections	7.45

The chief cause of the mortality and morbidity is infection. For the first few hours of labor cultures from the lower uterine segment are sterile, but after six hours they show a positive bacterial growth which becomes heavier with advancing hours whether the membranes are ruptured or not. It is for that reason that the elective operation is attended with the least danger.

The classical operation may be performed in the elective cases, whereas there is a general trend towards the low cervical operation in cases that have been in labor several hours because the feeling is prevailing that this type of operation minimizes the danger of infection. In some hospitals patients with fever above 100.5 for forty-eight consecutive hours during the puerperium are said to have infection. However, the cases listed in this report as infections were in reality actual puerperal septicemias, with all that that implies, and there were several instances where the patients narrowly escaped with their lives.

In more than two-thirds of the cases the indication given was contracted pelvis. When contracted pelvis is the reason for operation, then the dictum, once a Cesarean, always a Cesarean; should hold true, for one assumes a grave responsibility to allow to go into labor a woman who has been previously Cesareanized because of this indication.

The operation is not without historical interest. The title "Cesarean section" is credited to a Jesuit, Father Theophile Raynaud, who published his article in 1637. There are lines in Ovid which tell that Aesculapius was cut from his mother's womb. The story is that Coronis, the mother of the unborn Aesculapius by Apollo, was killed by Artemis for unfaithfulness. Her body was about to be burned when Apollo snatched the boy from his

*Read at a meeting of the Virginia, Maryland and District of Columbia Medical Society, Purcellville, Va., May 20, 1931.

mother's womb and carried him to the cave of the wise Centaur Chiron who instructed him in the cure of all diseases, and so he became the great God of Medicine to the Greeks. The first record of the recovery of both mother and child was performed by a sow gelder, Jacob Nufer, of Seigershaufen, who, after thirteen midwives and several lithotomists had failed to deliver or relieve his wife, decided to operate with a razor. The child lived to be 77 years old, and the mother recovered and later was delivered of twins, while four other children were born naturally.

That Shakespeare was familiar with the operation is seen in Macbeth, Act V, Scene VII, for Macduff says:

"Despair thy charm
And let the angel whom thou still hast served
Tell thee, Macduff was from his mother's womb
Untimely ripped."

1616 *Rhode Island Avenue, Northwest.*

Correspondence

A New Year's Suggestion.

To the Editor:

Just as these pages go to press, a New Year's suggestion comes to me, and I pass it on. It is all because a friend has sent me a recent book that has so pleased me, that I wish all my friends to know of it, especially my many old students.

It is "The Great Physician," a short life of Sir William Osler, by Edith Gittings Reid, a near neighbor and close friend of the physician and his family while in Baltimore, and is published by the Oxford University Press, New York.

This book is not so ambitious as the monumental work of two volumes on the same subject by Dr. Harvey Cushing, and yet in a strikingly sympathetic and stimulating way, it reveals the brilliant intellect and inherent fineness of character that have caused Dr. Osler to be described as "the greatest physician of history."

I will attempt no review of the book, for I wish my friends to read it and learn for themselves, as portrayed in its pages, something of the genius and simplicity of soul, as well as the methods in scientific work, of this great humanistic clinical physician, the Father of American medicine.

I feel that all of us should read this inspiring life-story at the beginning of this New Year; and may I express the hope, as I cherish the desire, that as we follow his methods, we may also absorb his spirit?

It is important that the educated physician study Medical History and this volume offers a rare opportunity to learn the method of practice as well as of teaching in the last century.

J. Allison Hodges,

Richmond, Va.,
December 18, 1931.

Miscellaneous

Findings of the Governor's Conference on Childhood and Youth.

It was a source of great satisfaction to those of us who were responsible for preparing the program for the recent State Conference on Childhood and Youth called by Governor Pollard to have such cordial and excellent cooperation from the physicians of the state. In fact, no single group gave more contructive and valuable cooperation. More than sixty physicians served as members of the committees. In this connection it is well to mention that our chief speaker on the opening evening, that is Dr. Ray Lyman Wilbur, who is chairman of the White House Conference on Child Health and Protection, is himself an outstanding physician.

The Conference was an outstanding success and was held in connection with the annual meeting of the Cooperative Education Association in Richmond, Va., November 23-25, 1931. The attendance of representative citizens from every section of the state was most gratifying. The public meetings on Monday night and Tuesday night were well attended. In fact, the auditorium of the John Marshall Hotel was filled to its capacity. The committee meetings which were held throghout the day Tuesday, November 24th, proved to be of the greatest value to those who participated. Many persons who are accustomed to attending state and national meetings said very frankly that the papers presented in the committee meetings were superior to anything they had had the pleasure of hearing at any other meeting on similar subjects.

As a result of the Conference very definite

objectives were set forth. These objectives are presented herewith, but in the near future they will be re-edited and somewhat condensed. The next and most important step is to bring the findings of this Conference to the attention of the citizens throughout the state in such a way that they will be glad to lend their assistance in an effort to carry out the findings and the need that childhood and youth of Virginia may have a greater opportunity for development than ever before. This task will require the cooperation of all agencies in the State in the interest of Childhood and Youth. Because of the cordial helpfulness of the members of the Medical Society of Virginia thus far, we feel confident that we shall have the very best possible cooperation from all members of the Society in this follow-up program.

Findings of the Governor's Conference on Childhood and Youth

This Virginia Conference on Childhood and Youth in honor of the first State Conference on childhood called by Governor A. J. Montague in 1904, which resulted in the establishment of the Cooperative Education Association and the adoption of a constructive and challenging program, proclaims this program an acknowledgment and continuation of that first great charter, the eight points of which were:

1. A nine months' school for every child.
2. A high school within reasonable distance of every child.
3. Well trained teachers for all public schools.
4. Efficient supervision of schools.
5. Introduction of agricultural and industrial training into the rural schools.
6. The promotion of libraries and correlation of public libraries and public schools.
7. Schools for the defective and dependent classes.
8. The organization of a citizen's educational association in every county and city.

This Virginia Conference endorses the Children's Charter adopted by the White House Conference on Child Health and Protection, November, 1930, and joins with the nation and the several states of our Union in the pledge to give to the children and youth of America the best possible opportunity for clean, wholesome and efficient development.

This State Conference, in seeking to meet this obligation of the Childhood and Youth of Virginia, sets forth, in addition, the following objectives:

That the Compulsory Education Law should be strengthened and should be more adequately enforced.

That financing local schools, and particularly the policy Virginia will adopt in setting up a satisfactory minimum standard of education in every county of the commonwealth is a fundamental next step in the school progress in this state.

That agencies now offering opportunities in parental education should be commended for their work and encouraged to continue, and that provision for consultation facilities for parents should be increased for the dissemination of information on the home and its relation to child welfare.

That the program of guidance as set up by the State Board of Education should be adopted throughout the state; that trained workers in guidance should be provided in order to give every high school pupil an opportunity to consult a vocational counsellor.

That Virginia should enact a part-time education law.

That the state should give adequate protection for all of its children, especially those subjected to the hazards and dangers of premature employment; and that the Child Labor Laws of Virginia should be amended so as to conform to the accepted standards of today.

That Virginia has reached the point where it should establish in the State Department of Education a Division of Special Education, and make provision for training regular workers in this field, and provide ample educational opportunity in general and special institutions for instruction of those who are handicapped by blindness, deafness, and other physical defects.

That more complete standards and methods of Safety Education should be set up both by state and local agencies.

That more adequate provision should be made for recreation and physical education for both sexes through the development both of state and local agencies.

That every expectant mother, regardless of circumstances, shall consult a physician for health supervision as soon as she suspects her pregnancy, and again in six weeks after delivery.

That every child shall be under the care and

health supervision of a physician from the date of his birth.

That a sufficient number of hospital beds be available for indigent women who are seriously ill during pregnancy, labor, or as a result of labor, and also for indigent children needing special treatment.

That the laity be made to realize the importance of health supervision for themselves and their families, and become willing to pay for advice for the prevention of disease rather than for a prescription or for medicine; and that every practicing physician in the state be brought to realize his responsibility for health supervision as well as for curative measures.

That every child in the state be under the supervision of a full-time health worker whose duty it is to promote and correlate the above objectives.

The development of adequate facilities, judicial, social, medical, educational, to deal with delinquent and pre-delinquent children in an intelligent manner to the end that the cause of delinquency may be discovered and prevented; that the individual may be treated so as to remove the cause of his conflict with society, and be prepared to re-enter the stream of normal life.

The development of a standard of life sufficiently high to guarantee that no child suffers a social handicap because of poverty or neglect.

The development of facilities to discover, provide necessary treatment and train every physically or mentally handicapped child to the maximum of his capacity.

To develop facilities both clinical and professional adequate to ascertain the causes of mental and emotional disturbance in every child and adult whose behavior is abnormal therefrom; to promote the best methods of care and the most successful treatment of the patient both at home or in a hospital or other institution; to stimulate a general campaign of prevention of nervous and mental diseases in a "systematic attempt to secure human brains so naturally endowed and so nurtured that people will think better, feel better, and act better."

That all road houses be put under state police supervision as a protective measure to many youthful patrons.

That the playground and other recreational activities of the schools and agencies concerned with leisure time activities be further developed as the best safeguard against the unworthy aspects of commercialized amusements.

That every child and youth be provided with a comprehensive program of religious education, representing standards as high as obtained in the best public schools, this program to involve typical Sunday, vacation, and weekday schedules of work and to presuppose training for leaders in this field and stimulation of parental responsibility for character development and spiritual nurture as an indispensable aid to the church in further perfecting its graded ministry of worship, education, and social service for the rising generation.

That the schools broaden and enrich their emphasis upon education for civic responsibilities and likewise their emphasis upon the time-tested virtues or modes of responses commonly regarded as the *sine qua non* of character matured at its best.

An organization of the citizens of each community that they may think, plan and work together in the effort to provide for the best possible school, home, church, physical, social, civic and economic conditions for their children and young people.

J. H. Montgomery,
Secretary.

The First State Hospital in America for the Mentally Sick—Some Interesting Historic Facts.

Virginia was, as is generally known, the first state to establish state care for the insane, or more properly speaking, the mentally sick. The initiation of this movement by Governor Fauquier in 1766 and the subsequent passing of the same year of Acts by the House of Burgesses, supporting his Excellency, are matters of great historic interest. This is specially true at this time when the state's five institutions have under their care and supervision more than ten thousand patients, and the maintenance, additions and improvements of these institutions cost this year about two million dollars. Furthermore, it is of special interest because of the present mental hygiene movement in the state, which has as its chief objective, the prevention of mental disorders.

Before the founding of the "Publick Hospital" at Williamsburg, the care of the mentally diseased in Colonial Virginia belonged to the parish of the church, but as was the case in the other colonies, they were confined in

jails or almshouses, left with friends, or allowed to wander about the country.

The credit for the founding of the first State Supported Hospital in this country for the care of persons with mental disease is due in a large measure to the efforts of Sir Francis Fauquier, Governor-General of His Majesty's Colony of Virginia, who seems to have been familiar with the hospitals in England, such as Bedlam, which were publicly supported. In his annual speech on Thursday, November 6, 1766, he addressed the House of Burgesses in these words: "It is expedient that I should recommend to your consideration and humanity a poor, unhappy set of people who are deprived of their senses and wander about the country terrifying the rest of their fellow creatures. A legal confinement and proper provision ought to be appointed for these miserable objects who cannot help themselves. Every civilized country has hospitals for these people where they are confined, maintained and attended by able physicians to endeavor to restore them their lost reason."

The following day, Hon. Richard Bland, of Prince George County, reported in part: "Resolved, That a Hospital be erected for the reception of persons who are so unhappy as to be deprived of their reason." In pursuance to this resolution "The Committee on Propositions and Grievances" was ordered to "prepare and bring in a Bill or Bills." However, no further action was taken at the time. In his speech in adjourning the House on April 11, 1767, the Governor quoted the above resolution of the previous session in regard to this matter, and also reminded the Council and the House of Burgesses that nothing had been done about it. "It was," he said, "a measure which I was in hopes humanity would have dictated to every man as soon as he was made acquainted with the call for it," etc.

As the Governor's appeal brought no response, he took matters into his own hands to make arrangements for the care of the mentally diseased who were brought to his attention. As a result, "Ye Scribe" of the House of Burgesses records that on November 29, 1769, "Mr. Treasurer presented to the House by Direction of the Governor a letter from Mr. Thomas Wilting of Philadelphia to the Hon. William Byrd, Esq., relative to the Reception of the Persons of unsound minds now in the Public Gaol of this Colony into the Hospital at Philadelphia."

The next day the House "Resolved, that an humble address be presented to his Excellency the Governor, returning him the Thanks of the House for his kind and humane attention to the piteous Situation of the four unhappy people who are disordered in their senses and now confined in the Public Gaol of this Colony and desiring that His Lordship will be pleased as he has proposed to send them to the Hospital in Philadelphia until a proper provision can be made here for the rest in like unhappy circumstances, and assuring his Lordship that this House will cheerfully pay all expenses that may attend their support and maintenance."

The humane interest and persistent action of Sir Francis Fauquier, brought the desired result, the establishment of the state hospital at Williamsburg, now known as the Eastern State Hospital. It was officially opened for the reception of patients in 1773.

W. F. D.

Woman's Auxiliary, to the Medical Society of Va.

PRESIDENT—*Mrs. J. Allison Hodges*, 5511 Cary Street Road, Richmond.
PRESIDENT-ELECT—*Mrs. W. P. McDowell*, Larchmont, Norfolk.
SECRETARY—*Mrs. James K. Hall*, 3011 Seminary Avenue, Richmond.
TREASURER—*Mrs. Reuben F. Simms*, 2034 Park Avenue, Richmond.

Child Health.

Children are the greatest assest of a Nation. It has been said "the world moves forward upon the feet of little children," so it behooves us to see that our children are strong and healthy, mentally and morally, as well as physically.

One of the first Commissions established by President Hoover was the one called The White House Conference upon Child Welfare. The services of the most outstanding citizens, both men and women, were enlisted in the cause.

A scientific and exhaustive research was made by experts in the Medical Profession and Social Welfare Agencies, and the child was studied from every angle.

The President asked that "Follow-up Con-

ferences" be held in the various States; accordingly, Governor Pollard called a "State Conference on Childhood and Youth," this Fall. It was held in Richmond on November 23rd-24th, and was largely attended.

We were fortunate in having two of the President's Commissioners on our program. The opening address was made by Dr. Ray Lyman Wilbur, Secretary of the Interior and Chairman of the White House Conference. Dr. J. F. Kelly, Member of the Planning Committee, and Chief of the Division of Colleges and Professional Schools of the U. S. Bureau of Education, told us of some of the findings of this Commission, and gave suggestions along educational lines, for after all health is largely a matter of education.

There were lectures and discussions upon Mental Hygiene, under-privileged and delinquent children, etc.; in fact, the child was discussed from every point of view, and much valuable information was given.

Any one wishing definite information on any Health Subject, can obtain data gratis by writing to the Bureau of Child Health, State Department of Health, State Office Building, Richmond, Va.

Mary Gray Hodges,
President.

The health of the child has claimed our special attention this past year, so we give below the very illuminating address on "The Beginners' Program" as presented at our Roanoke meeting, this Fall, by Miss Ellen H. Smith, of the Bureau of Child Health, State Department of Health.

To the Members of the Woman's Auxiliary, Medical Society of Virginia:

I think that I have been in a very enviable position for the last seven or eight years. As a volunteer, part-time worker in the Bureau of Child Health, State Department of Health, after careful training and supervision, I have been given the privilege of helping in some small measure those splendid people with such projects as the Five Point Child, the Four Point Home, Child Health Day, and the Preschool or Beginners' Program, about which I am to talk to you today.

The Beginners' Program is a plan for securing for every child, before it enters school for the first time, a complete health examination by its own physician and for having corrected all the necessary remediable physical defects discovered by the examination, so that these children may enter school as Five Pointers and not be handicapped in their school progress or in later life. In order to realize the necessity for such a program we need only stop and remember conditions revealed by the physical examination of our boys in the World War. One out of every three men examined was unfit for service, owing to defects in vision, hearing, throat, teeth, or nutrition, that should have been corrected in childhood. Later statistics show that 90 or 95 per cent of all children have such physical defects. We need also to reflect upon a statement made by Dr. Sidney B. Hall, our State Superintendent of Public Instruction, at a meeting of the Virginia Public Health Association last spring. Dr. Hall stated that last year in the public schools there were 28,482 pupils who failed to pass their grades, and this year they would have to be "repeaters." He said that undoubtedly physical handicaps were the main cause of failure, and that these repeaters were costing the state over a million dollars annually, because a whole year of schooling had to be given them again.

Several years ago, as an educational project, Preschool Clinics were held in many sections of the state conducted by physicians from the State Health Department. However, as soon as sufficient interest was created, these State Clinics were abandoned and replaced by the promotion of examinations made entirely by practicing physicians chosen by the parents of each child. To make this a statewide practice for all beginners is the aim of our Pre school Program.

Virtually all the programs of the Bureau of Child Health are now educational programs. We might almost say that the Beginners' Program is also an advertising agency for the practicing physicians, who, as we all know, are not allowed to advertise themselves. The ultimate goal of the program is to secure an annual physical "check-up" by the family physician, for every adult, every school child and every preschool child. We think that the Preschool Program will have an educational effect upon these two older groups. The Bureau through the personnel in the office and the field tries to create interest in these health examinations for "preschoolers" and to direct inter-

est towards securing all necessary corrections, so as to have the child "free to learn" when he enters school.

The details of the preschool health examination have been outlined and approved by the joint Child Welfare Committee from the Medical Society of Virginia, the Virginia Pediatric Society, and the Division Superintendents of Schools. The white record card is filled out when the family physician makes the health examination, and is retained by the physician himself for his files. He may supply the county nurse with any information he desires in order that she may do her follow-up work, and help in every way she can to secure corrections.

The physician also fills out the blue card which is given to the child to carry to his teacher when he enters school. This blue card relieves the teacher of giving this child the annual physical inspection required by the West Law. The blue card is filed by the teacher with her physical inspection card.

It must be clearly understood that the state is not asking physicians to do charity work for these children. The matter of fees is an affair between the physician and his patient and should be adjusted by them.

It would seem advisable also to get away from clinic examinations of the children. They should, when possible, be dealt with as individuals not herded into groups. When they come as individuals to their doctor's office they will learn to depend upon his advice to a much greater degree and will in time acquire the habit of consulting him. A happy little girl was skipping along the street one day and some one asked her where she was going. She replied, "I'm going to let my doctor see how well I am." That is the attitude we wish to achieve in our children.

All of us know that physicians will be ready to supply this type of health examination if the parents want it and are willing to pay for it. The Bureau is endeavoring to create the demand for this approved type of examination and also for any needed treatment. Advice about health habits will naturally accompany the examination.

The Metropolitan Life Insurance Company has found that it can increase the life span of its policyholders six years by annual health examinations and advice as to health habits. Even for sixty years, the cost of annual examinations is little enough to pay for an added six years of life. If we can convince the people that such is the fact, we shall be able to create a demand for annual health examinations for both adults and children.

How do we find the preschool children? Virtually all our successful Beginners' Programs have been in counties where we have a Health Unit or at least a Public Health Nurse. These health workers start and steer the program with the assistance of the Division Superintendent of Schools, his teachers, and such interested groups as Community Leagues, Parent-Teachers Associations, woman's clubs, church and civic organizations.

The large cities have their own health commissioners and their own health projects. The Beginners' Program is used by smaller cities and towns, as well as rural districts.

Survey blanks are sent by the Division Superintendents of Schools to his teachers. The teacher secures from Johnny and Susan the names of their little brothers and sisters who will enter school next fall, also the name of their family physician. Nurse, leagues and other organizations find the homes where there is not already a child attending school, for the survey. The Division Superintendent mails an urgent letter to each of the parents stating the reasons for securing such a preschool health examination. The nurse and her groups and committees follow up these parents and, when necessary, secure appointments with physicians and arrange for transportation to the doctor's office.

Public interest and cooperation in this program are sought by educational articles in newspapers, by radio and other talks, by personal contact, and by such letters as the one which Mrs. Hodges sent you last spring.

We have come a long way, but we still have a long way to go. (Miss Smith here showed a chart indicating just what has been done and what still remains to be done. This showed an increase in preschool examinations for this year over previous years, in spite of drought and depression.)

Education of the people as a whole is a slow process. In the ten or twelve years since the passage of the West Law, requiring the annual physical inspection of pupils by teachers, we have come far. Many school children are being taken to their family physicians. Five Pointers, with certificates from physicians and

dentists, are in some communities now called "High Five Pointers" to distinguish them from those who have been graded by teachers.

I wish I had time to talk of the other splendid health educational devices of the Bureau—such as Child Health Day and the Four Point Home. In a world where billboard advertisements shriek, often falsely or semi-falsely, the value of their goods for health's sake, we hope to guide public attention and form public opinion as to what are the essentials of good health—positive, joyous health—and how it may be secured for all the people, beginning with these little ones just starting on their long road to learning which can be made much nearer a "royal road" if we all do our full duty.

Tea Given by Petersburg Auxiliary.

Some of the members of the Woman's Auxiliary in Petersburg, Va., gave a tea the latter part of November, in the home of Mrs. George H. Reese, of that city, for some of the doctors' wives and undergraduate nurses of the Petersburg Hospital. The autumn spirit was carried out in the decorations by the profuse use of yellow chysanthemums. Mrs. Reese was assisted in receiving by Mrs. W. B. McIlwaine, Mrs. E. L. McGill, Mrs. Wright Clarkson and Mrs. Meade Edmunds.

New Notes

The following items have been sent us by Mrs. Milton P. Overholser, Harrisonville, Mo., chairman of the Committee of Press and Publicity of the National Auxiliary:

The mid-year meeting of the Board of Directors of the Woman's Auxiliary to the American Medical Association was held in Chicago, November 13th, at the Pearson Hotel, Mrs. Arthur B. McGlothlan, presiding. Twenty-three were in attendance. The reports indicated all chairmen actively engaged in promoting their work. Increased interest in every department is being shown by many of the state and county units. Tentative plans were outlined for the program of the Annual Convention to be held in New Orleans, May 9-13, 1932.

"The Metropolitan Life Insurance Company has offered the State Chairman of Health Education of the Georgia State Auxiliary, Mrs. Bonar White, twelve sets of film strips, free of charge, for use in the twelve districts." It is hoped that county auxiliaries will avail themselves of this opportunity for health education and disease prevention. Among the twelve subjects are "No More Diphtheria," "How to Live Long," and "Lives of Health Heroes," all especially suited for high school as well as adult audiences.

In Pennsylvania, the Public Relations Department shows that during the past year Auxiliary contacts were made with Parent-Teacher Associations, Mothers' Clubs, Women's Study Clubs, Red Cross Organizations, Tuberculosis Societies, pre-school clinics, dental clinics, and crippled children's homes.

Our national president-elect, Mrs. Walter Jackson Freeman, Philadelphia, is just home after a stormy voyage from Germany, with her convalescent son. Our congratulations are to ourselves as well as to her for her safe return.

In regard to programs it may be said there is a growing interest in and demand for programs dealing with mental hygiene and social hygiene. Dr. Ray Lyman Wilbur, secretary of the Interior, asserts that "the mental health of the nation is its greatest asset, and mental hygiene is a vital part of preventive medicine." A Division of Mental Hygiene is a part of the United States Public Health Service. Mental Hygiene was given the most prominent place on the program of the Annual Convention of the Medical Education, Medical Licensure and Hospitals (of the American Medical Association) in Chicago last February. It is receiving the attention of State Medical Associations, is an established division of the Health Department of State and National Congress of Parents and Teachers, and in the National Federation of Women's Clubs. It is not unlikely that it will become one of the subjects receiving special consideration by Auxiliaries in building our Educational programs.

From South Carolina comes the following report of worthwhile interests: We have thirteen Auxiliaries and hope our membership will be 200 by spring. All our women are interested in the Student Loan Fund. *Hygeia* is being promoted for schools and free libraries. Some Auxiliaries sponsor free milk stations. Prizes are provided for Nurses' Training

Classes in three hospitals. The functioning of the Courtesy chairman is deeply appreciated. The increased kindly and get-together atmosphere is most encouraging and helpful.

Truth About Medicine

In addition to the articles enumerated in our letter of October 31st, the following have been accepted:

Lederle Laboratories, Inc.
Diphtheria Toxin-Antitoxin Mixture, 0.1 L+ (Goat)
H. K. Mulford Co.
Ivyol—Poison Oak Extract—Mulford
Hypo Units Ivyol—Poison Oak Extract
U. S. Standard Products Co.
Typhoid Vaccine, one 5 c.c. vial package
Typhoid Vaccine, one 20 c.c. vial package
Typhoid Paratyphoid Vaccine Combined, one 5 c.c. vial package
Typhoid Paratyphoid Vaccine Combined, one 20 c.c. vial package.

The following article has been exempted and included with the List of Exempted Medicinal Articles (New and Non-official Remedies, 1931, p. 477):

Lederle Laboratories, Inc.
Ferric Ammonium Citrate—Lederle capsules, 0.5 Gm.

NEW AND NON-OFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Non-official Remedies:

Typhoid Paratyphoid Vaccine (Prophylactic) (New and Non-official Remedies, 1931, p. 380).—This product is also marketed in packages of ten 2½ c.c. vials containing in each c.c. 1,000 million killed typhoid bacilli, 750 million killed paratyphoid A and 750 million killed paratyphoid B bacilli. Parke, Davis & Co., Detroit.

Typhoid Vaccine (Prophylactic) (New and Non-official Remedies, 1931, p 380).—This product is also marketed in ten 2½ c.c. vials containing in each c.c. 1,000 million killed typhoid bacilli. Parks, Davis & Co., Detroit.

Thromboplastin Local—Lederle.—An extract of cattle brain in physiological solution of sodium chloride, prepared according to the method of Hess. For a discussion of actions and uses, see Fibrin Ferments and Thromboplastic Substances, New and Non-official Remedies, 1931, p. 188. The product is marketed in 5 c.c. vials and 20 c.c. vials. Lederle Laboratories, Inc., Pearl River, N. Y.

Diphtheria Toxoid—Lederle (New and Non-official Remedies, 1931, p. 370).—This product is also marketed in packages of one immunization treatment consisting of two 1 c.c. syringes; in packages of one immunization treatment consisting of two 1 c c. vials; in packages of one syringe containing sufficient diluted diphtheria toxoid for one reaction test; and in packages of one vial containing sufficient diluted diphtheria toxoid for five reaction tests. Lederle Laboratories, Inc., Pearl River, N. Y.

Glaseptic Ampoules Solution Glucose, 50 per cent, 100 c.c —Each ampoule contains dextrose—U. S. P. 50 Gm., in distilled water to make 100 c c.; buffered with sodium citrate. Parke, Davis & Co., Detroit.

Pollen Antigens—Lederle (New and Non-official Remedies, 1931, p. 28).—The following products have been accepted: Prostrate Pigweed Pollen Antigen—Lederle, Summer Cypress Pollen Antigen—Lederle; Pollen Antigens—Lederle are also marketed in series D packages; five vials each containing 3,000 pollen units and five vials of diluent. Lederle Laboratories, Inc., Pearl River, N Y.

Diphtheria Toxin-Antitoxin Mixture 0.1 L+ (New and Non-official Remedies, 1931, p. 362).—This product is also marketed in packages of three syringes, representing one complete immunization. Lederle Laboratories, Inc., Pearl River, N. Y.

Neocinchophen—Abbott Tablets, 7½ grains—Each tablet contains neocinchophen—Abbott (New and Non-official Remedies, 1931, p. 125), 7½ grains. Abbott Laboratories, North Chicago.

Tuberculin Intracutaneous (Human Type) (New and Non-official Remedies, 1931, p. 366).—This product is also marketed in packages of one 3 c.c. vial containing tuberculin old (human type) sufficient for 50 tests. H. K. Mulford Co., Philadelphia.

Tuberculin Intracutaneous (Bovine Type) (New and Non-official Remedies, 1931, p. 366).—This product is also marketed in packages of one 3 c.c. vial containing tuberculin old (bovine type) sufficient for 50 tests. H. K. Mulford Co., Philadelphia.

Scarlet Fever Streptococcus Toxin for Preventive Immunization—P. D. & Co. (New and Non-official Remedies, 1931, p. 369).—This product is also marketed in packages of six 1 c.c. vials. Parke, Davis & Co., Detroit. (Jour. A. M. A., November 7, 1931, p. 1386).

Synephrin Tartrate.—The tartrate of an alkaloid obtained synthetically. Synephrin tartrate is used as a vasoconstrictor. It is less toxic than either epinephrine or ephedrine, and its vasoconstrictor action, while not so pronounced as that of epinephrine, endures for a longer time. In combination with procaine hydrochloride, it is useful for local anesthesia in dental operations and in minor surgery in cases in which a bloodless area is not required. Applied to mucous membranes, it causes contraction of the capillaries, thus reducing swelling and congestion of such membranes. Because of this action it is also used for shrinking swollen turbinates. The drug is supplied in the form of synephrin tartrate solution, 3% and 5%, as synephrin tartrate emulsion plain and synephrin tartrate emulsion compound. Frederick Stearns & Co., Detroit. (Jour. A. M. A., November 21, 1931, p. 1537).

Ivyol—Poison Oak Extract—Mulford.—A solution in olive oil of an irritant or vesicant oil extracted from the fresh leaves of poison oak. It is used to relieve the symptoms of the dermatitis produced through contact with poison oak The product is supplied in the form of "Hypo Units," each containing 0.7 c.c. of ivyol—poison oak extract. H. K. Mulford Co., Philadelphia.

Diphtheria Toxin-Antitoxin Mixture 0.1 L+ (Goat).—A mixture containing 0.1 L+ dose of diphtheria toxin per c c. neutralized with the required amount of diphtheria antitoxin obtained from goats. It is marketed in packages of three vials, representing one immunization; in packages of three syringes, representing one immunization; in packages of thirty vials, representing ten immunizations; and in packages of one 30 c.c. vial, representing ten immunizations. Lederle Laboratories, Inc., Pearl River, N. Y.

Neocinchophen—Squibb.—A brand of neocinchophen.—N. N. R (New and Non-official Remedies, 1931, p. 123). It is also supplied in 5 grain tablets. E. R. Squibb & Sons, New York. (Jour. A M. A., November 28, 1931, p. 1626).

Foods

The following products have been accepted by the Committee on Foods of the American Medical Association for inclusion in Accepted Foods:

Mead's Cereal (Mead Johnson & Co., Evansville, Ind.)—A cereal mixture of wheat meal (farina), oatmeal, wheat embryo and yellow corn meal; with powdered bone, dehydrated alfalfa leaf and brewers' yeast. Substantial amounts of vitamins A, B, E and G are claimed to be present. It is claimed to be a good quality cereal enriched with vitamin and mineral containing foods. One ounce contains as much calcium as six ounces of milk and more iron than two egg yolks; one and one-half ounces more phosphorus than one egg yolk, and more copper than three times as much rolled oats or four times as much farina.

SMACO Hypo-Allergic Skim Milk (303) (S. M. A. Corporation, Cleveland, Ohio).—A sterilized almost fat free skim milk made hypo-allergic by prolonged processing. This hypo-allergic skim milk is claimed to be especially prepared for individuals subject to allergic reactions from usual boiled skim milk or other skim milk preparations. It may be used in regular feeding formulas.

Propaganda for Reform

Iron and Copper in the Diet—There have developed evidences that certain minerals which occur in small quantities in natural foods enter into the nutritive exchanges of the organisms in ways more important than has heretofore been believed. For many years claims of the biologic significance of a number of such elements have been heard. They are almost inevitable contaminants of foods, so that it has been extremely difficult to determine decisively whether zinc, nickel, cobalt, manganese, copper and others are chance constituents of the animal organism, or whether one or more function in some essential process. Recently attention has been focused on one of these elements by the discovery that copper possesses the property of supplementing iron in forming hemoglobin in certain types of experimental anemia. Nutritional anemia can apparently be best corrected in several species by the addition of copper as well as iron to the defective rations. There also is considerable evidence that important functions are performed by manganese. Many analyses of foods concerning the mineral content have become available so that the daily intake of these elements may be judged. Wheat bran, blueberries, whole wheat, split peas, and navy beans are rich in manganese. Calf liver, oysters, beef liver, mushrooms, currants and chocolate are rich in copper. Pork liver, beef liver, spinach, lima beans, calf liver, and navy beans are rich in iron. Vegetables and cereals are the chief contributors of iron. Fruits are an important source of all three elements. (Jour. A. M. A., July 18, 1931, p. 180).

Silver Nitrate Ampules and Capsules.—The A. M. A. Chemical Laboratory undertook an investigation of silver nitrate capsules and ampules to determine whether the market supply was satisfactory. The Laboratory found that the various brands of silver nitrate ampules contained in both wax and glass ampules showed that the strength of the silver nitrate solution is generally somewhat greater than the amount claimed and that practically none of the silver is absorbed by the wax ampule. The quantity of solution found in the glass ampules complied with that claimed. On the other hand, in the wax ampules not only did the quantity of solution vary with each brand, but the products of the various firms differed markedly, ranging from 0.07 c.c. to as high as 0.26 c.c. The Laboratory points to the possible danger from fragments of glass which may form when the glass ampule is opened and which may reach the infant's eye when the silver solution is instilled. The Council on Pharmacy and Chemistry considered the report of the Laboratory and authorized its publication. In recommending endorsement and publication of the report the Council's referee expressed gratification at the reassurance given by the report that the wax capsules do not inactivate the silver nitrate and called attention to the fact that the use of glass ampules may be an open invitation to accident. (Jour. A. M. A., September 5, 1931, p. 706).

New and Non-official Remedies.—There is no better way of keeping up to date on the newer remedies than to follow the work of a competent, unbiased group of scientific investigators, working altruistically in the interest of the medical profession. The Council on Pharmacy and Chemistry is such a group. New and Non-official Remedies is its list of accepted products. The book is published annually and describes accepted articles and includes facts the physician should know. It keeps physicians up to date regarding the newest remedies. It advises physicians of products not worthy of his attention. It is useful to the physician when he is importuned by the detail man to prescribe a new specialty. (Jour. A. M. A., September 5, 1931, p. 707).

From N. N. R. to the U. S. P.—Of the forty new products in the United States Pharmacopeia X, thirty-one came from New and Non-official Remedies. No better recommendation can be given for "N. N. R." (Jour. A. M. A., September 26, 1931, p. 931).

Foods and Food Advertising.—Today, advertising of foods, separate from the package container, is not controlled by any food statutes, and indeed is quite free of any efficient control. The writer of advertising of food products, aside from such limited knowledge of foods and nutrition as he may possess, has only a versatile vocabulary and his conscience as guides in dramatizing the virtues of the products he proclaims to the public. Under these conditions, advertising for food products began to approach the tales of Hans Christian Andersen and the brothers Grimm. Into this mass of mingled truth and deception entered the Committee on Foods of the American Medical Association.

It is not surprising that its initial steps should have been greeted with apprehension and bitter deprecation by some of the organs of the food industry, of business and of advertising. The Committee on Foods was established to protect the readers of the journals published by the American Medical Association against improper claims made for foods. If the medical profession required such protection, how much more was the protection necessary for the average layman to whom the same claims were made as were made to physicians. Only those who have been actively associated with the Committee on Foods can realize the vast amount of good already accomplished. (Jour. A. M. A., October 3, 1931, p. 1004.)

Is Manganese An Essential Element?—Considerable has been written of late about the possible role of copper as a "promoter" of hemoglobin formation in certain types of anemia. It appears to act as a supplement to iron in this process. A similar function has been attribute to other elements, notably manganese, though the claims are still stoutly denied by the majority of investigators. Manganese is constantly present in animal tissues and this has led to the assumption that it is likely to promote some useful purpose. Experiments have been reported in which the addition of traces of manganese

to a diet of whole cow's milk supplemented with iron and copper has a favorable effect on the growth of mice and that without manganese, they failed to ovulate properly. The latter was true also for female rats. These experiments indicate that manganese may be closely connected with the reproductive organs. Other investigators also insist that manganese does not take part in blood regeneration, but that the element aids in rendering a diet complete for the support of reproduction and suckling of young. (Jour. A. M. A., October 10, 1931, p. 1078.)

The Cost of Proprietary and Nonproprietary Drugs. A comparison of the prices of drugs sold respectively under protected and nonprotected names shows that the cost of the former is far in excess of the price of which the latter are sold. A comparison of the wholesale price of proprietaries compared with the cost of the drugs sold under their nonproprietary name shows that the total cost of one ounce each of these under a protected name is $25 30, while the cost of an ounce each under an unprotected name is but $6.40. The cost of the proprietary name to the consumer is $18.90. (Jour. A. M. A., October 24, 1931, p. 1226.)

Is Vitamin A an Anti-Infective Agent?—The significance of vitamin A as an essential of human nutrition can no longer be questioned. Until recently, physiologists have been engrossed with the consideration of the more obvious manifestations of deficiency disorders. The gross lesions of scurvy, pellagra, rickets and other results of dietary defects have received foremost consideration. When mastoid and nasal sinusitis, purulent otitis media, and ocular, respiratory and alimentary tract infections were found to occur in laboratory animals deprived of vitamin A, the problem of "lowered resistance" naturally presented itself. Recent investigation has suggested that infection may follow the weakening of the tissues, and that it may be due to the breakdown of the local tissue defenses. This has raised the question as to whether it is proper to refer to vitamin A as an "anti-infective" agent. Rats inoculated with virulent bacteria and kept on a vitamin A-free diet showed markedly decreased resistance to infection as compared with controls receiving cod-liver oil. No such susceptibility to similar inoculations was found in rats on a diet deficient in vitamin D, compared to controls protected by viosterol. Increased susceptibility to infection is apparently an early manifestation of a dietary low in vitamin A. There has been a lack of evidence that vitamin A can cure infections when the barrier of the mucous membranes has been passed or that it can prevent or cure infections that enter the blood stream. The newer studies pave the way for the possibility, however, that vitamin A may after all do more than maintain the physiologic defenses of the mucous membranes. (Jour. A. M. A., October 24, 1931, p. 1229.)

The Absorption of Levulose.—Various investigators have asserted that levulose is particularly valuable in the dietary of patients with diabetes. Perhaps the most enthusiastic report, among the conflicting statements, is that of Joslin who is inclined to believe that levulose can be used with advantage in the diabetic diet in small amounts daily for intermittent periods, Levulose seems to cause a different type of metabolism from dextrose, possibly because of the conversion of levulose in part into fat in diabetes or to a more active stimulation of the production of insulin. A recent investigation has shown that levulose is not changed to dextrose in the intestines. Whatever trancformations occur take place beyond the seat of absorption. (Jour. A. M. A., October 24, 1931, p. 1230.)

Preliminary Reports of the Council on Pharmacy and Chemistry.—New drugs are constantly being introduced and new uses are discovered for substances already known. If such a drug is of non-secret composition and its early trials appear to give promise of therapeutic value, the Council on Pharmacy and Chemistry may publish a preliminary report on it explaining that its therapeutic status is in the experimental stage but that the evidence presented may warrant a clinic trial in selected, controlled cases. (Jour. A. M. A., October 31, 1931, p. 1301.)

Book Announcements

Medicine in Virginia in the Eighteenth Century. By WYNDHAM B. BLANTON, M. D. Published Under the Auspices of the Medical Society of Virginia. Garrett and Massie, Inc., Richmond, Va. 1931. Octavo of 500 pages with thirty-five full page illustrations. Binding of Irish linen with an all-over design. Price, $7.50.

Full announcement of this book is given in the Editorial Department of this issue of the MONTHLY.

Health Protection for the Preschool Child. A National Survey of the Use of Preventive Medical and Dental Service for Children Under Six. Report to the Section on Medical Service. GEORGE TRUMAN PALMER, Dr. P. H., Chairman, Subcommittee on Statistics; MAHEW DERRYBERRY, Research Assistant; PHILIP VAN INGEN, M. D., Chairman, Committee on Medical Care for Children. White House Conference on Child Health and Protection. The Century Company. New York. 1931. Octavo of 275-xxi pages. Cloth. Price, $2.50.

Conquering Arthritis. By H. M. MARGOLIS, M. D. The Macmillan Company. New York. 1931. Octavo of x-192 pages. Cloth.

Allergy and Applied Immunology. A Handbook for Physician and Patient, on Asthma, Hay Fever, Urticaria, Eczema, Migraine and Kindred Manifestations of Allergy. By WARREN T. VAUGHAN, M. D., Richmond, Va. St. Louis. The C. V. Mosby Company. 1931. Illustrated. Octavo of 359 pages. Cloth. Price, $4.50.

Living the Liver Diet. By ELMER A. MINER, M. D., Independence, Kansas. With Introduction. By WILLIAM P. MURPHY, M. D., Instructor in Medicine at the Harvard Medical School, Boston, Mass. St. Louis. The C. V. Mosby Company. 1931. 12mo. of 106 pages. Cloth. Price, $1.50.

Certified Milk Conferences Held in 1931. Annual Conference American Association of Medical Milk Commissions, Inc., and Certified Milk Producers' Association of America, Inc. Philadelphia, Pa., June 8-9, 1931. Annual Conference Metropolitan Certified Milk Producers, Inc., with the Certified Milk Producers' Association of America, Inc., New York, February 2, 1931. Constitution and By-Laws of the American Association of Medical Milk Commissions, Inc. Constitution and By-Laws of the Certified Milk Producers' Association of America, Inc. Methods and Standards for the Production of Certified Milk. Octavo 334-viii pages. Cloth.

Virginia Medical Monthly

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Editorial

"Medicine in Virginia in the Eighteenth Century,"

The second volume of the series of publications of the history of medicine in Virginia, by Wyndham B. Blanton, M. D., Chairman, Historical Committee of the Medical Society of Virginia, has been issued by its publishers* and deserves a hearty reception by the doctors of Virginia.

Before proceeding editorially to lay before our readers some of the features of this long-awaited publication, a word of appreciation and thanks should be expressed to Wyndham Blanton who has patiently and skillfully written the two volumes and has made possible a written record of this large part of the life of the people of this Commonwealth. From dark archives of colonial records, from forgotten publications in public libraries, from family records, from church and court repositories, Dr. Blanton and his assistants have hour upon hour worked in order to bring together the material for the publication of these volumes. Every doctor who cherishes in his thoughts respect or reverence or admiration for the great and learned profession of medicine, the world over, as it is today, must feel a genuine sense of interest in this story of medicine in early America as disclosed in Virginia from its colonization, 1607, to and through the Revolutionary period.

*Garrett and Massie, Inc., Richmond, Va.

The author of such publications recording the untold record of a great profession, in the life of people, inspires the appreciation and gratitude of his fellow-practitioners, especially of the membership of the organization authorizing and sponsoring the work.

With Lossing, Sparks, Alexander Brown (historians), Hayden, and others, Wyndham Blanton will take an important place in a group of historians who have served their State well by compiling and publishing historical material, in book form, that will serve generations to come as the story of Virginia is retold and rewritten.

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"Medicine in America during the eighteenth century was not greatly different from that of the preceding one. Doctors born and educated in England dominated the profession, and at the same time quacks were more numerous. Toward the end of the century increasing numbers of young men sought a medical education abroad. The latter years of the century witnessed also the rise of a truly American medicine—the beginning of medical societies, hospitals and a native literature. Americans made notable contributions toward inoculation. There was daring frontier surgery, good botanical observation, the development of first-hand knowledge of certain epidemic diseases, and a noticeable tendency on the part of out-

standing men to enter the medical profession. The patriotic service of the medical men during the American Revolution, as well as the political and military achievements of numbers of physicians in this century, show what a superior order of men many of them were. For Virginia this century was a golden age. In wealth, size and power she stood first among the colonies.

"The wealth of historical material bearing on the many phases of Virginia medical history in this century has been for the first time adequately investigated. Many curious and important facts have been brought to light—facts which reflect the whole state of American medicine during this period. Whereas the book deals with medicine in Virginia it can in no sense be considered of purely sectional interest."

"Medicine in Virginia in the Eighteenth Century begins with a review of the century as an appropriate setting in which to view the development of medical science in the Colony. The second chapter, entitled The Three Arts, shows what stature the theory and practice of medicine, surgery and obstetrics attained during this period. The Handmaids of Medicine—pharmacy, dentistry and nursing—is the subject of the third chapter. Here, among other things, the records of the earliest known apothecary shop in America are presented and delightful bits of knowledge about early American dentistry appear. The section on Epidemics vividly portrays the terror and consternation occasioned by yellow fever and smallpox. The chapter on Medical Education sketches fully pre-medical education in the Colony and presents original documents illustrating apprenticeship and indenture as applied to medicine. New and interesting facts are here offered touching medical instruction at the College of William and Mary and the northern colleges, but especially important is the information bearing on Edinburgh as the *mater gloriosa studiorum*."

"Under the title Reading and Writing the author gives an illuminating account of the colonial Virginia physician's libraries and particularly the remarkable collection of medical books in the library of William Byrd. In considering medical authorship in the Colony—John Leigh's classical essay on opium and William Brown's first *American Pharmacopeia* are given emphasis. The Virginia botanists in this century—there were four or five of them—were known all over the world. The chapter on Botany tells about their contributions in this allied field of medical science. A chapter on Plantation Medicine follows. Here occurs an account of the diseases the negro brought to this country as well as those he succumbed to after his arrival. The master safeguarded the health of his slaves by sanitary regulations, required cleanliness, hospital attention and the services of the best white physicians. Negro doctors, nurses and midwives add to the interest of this chapter.

"The next chapter brings together for the first time all the remarkable medical interest of two great amateur practitioners—William Byrd and Thomas Jefferson. Both were inveterate in their search for the truth in the field of medicine and Jefferson's contribution exceeded that of any contemporary Virginia doctor. The section on Advertising and Quackery contains many astonishing examples culled chiefly from the colonial newspapers—enough to send a shudder through every advocate of the standard of modern medical ethics."

"Virginia doctors fought in the Colonial wars and some of them gave a good account of themselves, as the chapter on Doctors and the Colonial Wars relates. It was to Revolutionary medicine that Virginia rendered unparalleled service. More than two hundred and fifty Virginia physicians saw service of one kind or another. An account of the lives of Brown, Craik, Tucker and many others is given. There follows a description of hospitals in Virginia between 1700 and 1800—the military hospitals, chiefly in and around Williamsburg during the Revolution, the first marine hospital in the United States, located at Ferry Point, the first insane asylum at Williamsburg, as well as something about pest-houses and pioneer private hospitals. Chapters on Men of Mark and Washington's Physicians, Diseases and Death contain the impressive record of many Virginia physicians who attained to eminence during this century.

"Towns and Town Doctors shows what sort of places our early towns were and why the majority of physicians chose to practice there. Many interesting characters are introduced in this chapter. Country Doctors attempts to do

the same thing for that large body of respectable rural medical men who helped make up the profession of that day. A final chapter on Medical Legislation reproduces and explains all of the medical practice acts of the century, and includes the Act of 1736 which was the earliest legislation of this type on the American continent."

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Its Bibliography

One interested in such publications as Blanton's "Medicine in Virginia in the Eighteenth Century" naturally turns from the index to the bibliography. One wishes to pass from the list of titles to chapters, to the source of material employed in writing the text of the work. An appreciation of the wealth of material consulted in the writing of this story is to be gotten as one notes the enumeration of more than two hundred publications and documents listed in the bibliography. One notes, for instance, the "Bland Papers"; R. A. Brock: Alexander Brown's "The Cabells and their Kin"; Philip Alexander Bruce's publications; Charles City County Records, Originals 1751, etc.; Crozier's Virginia County Records: Eckenrode's writings; Fithian's "Journal and Letters, 1767-1777"; The Gentleman's Magazine and Historical Chronicle, London, 1731: Hayden's "Virginia Genealogies"; Heitman's "Historical Register of the Officers of the Continental Army during the War of the Revolution, 1775-1783"; Hening's "The Statutes at Large"; Washington Irving; Thos. Jefferson; Tobias Lear; Benson J. Lossing; James Madison; H. R. McIlwaine; William Meade, Benjamin Rush; Jared Sparks; and W. G. Stanard. These are only a few of the eminent writers listed. From such a rich source has been gathered the interesting material to be found in the several divisions of the work.

The Book

It is a beautiful book, containing 500 pages, size 7½x10½ inches. It is printed on natural color, antique finish, rag paper, and bound in heavyweight Irish linen with an all-over design by Charles W. Smith. The thirty-five full page illustrations include engravings and silhouettes of prominent physicians of the Eighteenth Century, newspaper advertisements, college diplomas, title pages from medical and historical books of the period, and apothecary shops.

It is published under the auspices of the Medical Society of Virginia and is sponsored by its membership. Every member of the Virginia profession should have this book and its companion volume, "Medicine in Virginia in the Seventeenth Century," in his library and home.

Proceedings of Societies

The Northampton County Medical Society

Met at the Memorial Hospital, Nassawadox, Va., on December 16th. Dr. S. K. Ames, of Cape Charles, presented a case report of Malta Fever, which was discussed by Dr. J. R. Hamilton and Mr. A. A. Shanks, director of the branch State Laboratory at Nassawadox, following which Mr. Shanks gave a paper on The Laboratory Diagnosis of Diphtheria. Dr. C. J. Bradshaw, chief of the Accomack-Northampton Health Unit, spoke of the local situation in regard to diphtheria and the fact that there had been twelve deaths recently, all in children who had not had complete immuni-

zation. He then presented a plan proposed by Dr. Draper, State Health Commissioner, whereby the work of immunization might be carried out by the family physicians. Action of the Society was deferred to January 6, 1932.

Election of officers resulted in the re-election of the present officers, viz.: Dr. H. L. Denoon, Jr., as president; Dr. Wm. T. Green, as vice-president; and Dr. W. Carey Henderson as secretary. All are of Nassawadox.

The Post-Graduate Medical Society of Southern Virginia

Met in the High School Auditorium at Wakefield at 2:30 P. M., Tuesday, November 17th. In the absence of the president, Dr. Frank Mallory, of Lawrenceville, the chair was occupied by Dr. W. W. Seward, of Surry, first vice-president. About forty physicians attended the meeting.

Dr. B. H. Knight, an associate of Dr. W. W. Seward, of Surry, was elected to membership.

Papers were presented by Dr. Stuart McGuire, and Dr. J. Powell Williams, of Richmond, and by Drs. L. S. Early, Wright Clarkson and C. S. Dodd, of Petersburg.

Following the scientific program, a delightful supper was served in the High School Building by the ladies of Wakefield.

Drs. T. M. Raines and S. B. Ellis, of Wakefield, were on the entertainment committee.

Dr. B. H. Knight was elected a delegate and Dr. W. W. Seward alternate to represent Surry County in the House of Delegates of the Medical Society of Virginia.

Richmond (Va.) Academy of Medicine.

At the annual meeting of the Academy, on December 8th, Dr. R. Finley Gayle was elected president for the ensuing year, and Drs. I. A. Bigger and St. Geo. T. Grinnan, vice-presidents. Dr. Mark W. Peyser was elected secretary-treasurer for the thirty-ninth consecutive time. The Board of Trustees of the Academy for 1932 is composed of Drs. James H. Smith, Wyndham B. Blanton, Wm. H. Higgins, J. Morrison Hutcheson, and R. Finley Gayle. All officers are of Richmond.

The Southside Virginia Medical Association

Met in Petersburg, Va., on December 8th, with an unusually large attendance. The feature of the meeting was an illustrated address by Dr. Temple Fay, of Philadelphia, on "Care and Treatment of Head Injuries," which brought out many new ideas on this subject. All papers on the program were freely discussed and much enjoyed.

The following officers were elected for 1932: President, Dr. W. W. Wilkinson, La Crosse; vice-presidents, Dr. D. C. Mayes, Church Road; Dr. O. R. Yates, Suffolk; Dr. E. B. Neal, Emporia; and Dr. Meade Edmunds, Petersburg; secretary-treasurer, Dr. R. L. Raiford, Franklin, re-elected.

After a delightful dinner by the Petersburg members, the meeting adjourned to meet at the Central State Hospital, Petersburg, on the second Tuesday in March.

The Physician's Journal Club of the Eastern Shore of Virginia

Met on December 8th, at Drummondtown Tavern, Accomac, Va. After an interesting scientific session the election of officers was held. Dr. S. K. Ames, of Cape Charles, was elected to succeed Dr. John W. Robertson, of Onancock, as president. For vice-president Dr. O. R. Fletcher, of Sanford, was elected to follow Dr. Ames, of Cape Charles. For secretary Dr. Rooker White, of Keller, is to be followed by Dr. W. Carey Henderson, of Nassawadox.

This organization is purely scientific and social and is composed of the white physicians in good standing who are members of the medical societies of Accomack and Northampton counties.

The Petersburg (Va.) Medical Faculty,

At its annual meeting in November, elected the following officers for the ensuing year: President, Dr. Meade C. Edmunds; vice-presidents, Drs. W. B. McIlwaine and Claiborne T. Jones; secretary-treasurer, Dr. Wilbur M. Bowman (re-elected). All officers are of Petersburg.

The Seaboard Medical Association of Virginia and North Carolina

Held its annual meeting in Suffolk, Va., December 1st-3rd, under the presidency of Dr. James H. Culpepper, of Norfolk, Va. There was an attendance of 125 and a number of interesting papers were presented. On Wednesday and Thursday, luncheon was tendered the visitors by members of the Nansemond County Medical Society at Hotel Elliott.

Rocky Mount, N. C., was selected as the next place of meeting and the following officers were elected: President, Dr. Edmund S. Boice, Rocky Mount, N. C.; vice-presidents,

Dr. O. R. Yates, Suffolk, Va., Dr. Paul F. Whitaker, Kinston, N. C., and Dr. J. E. Marable, Newport News, Va. Dr. Clarence Porter Jones, Newport News, Va., and Dr. A. M. Burfoot, Fentress, Va., were re-elected secretary and treasurer, respectively.

News Notes

May the New Year be one of Happiness to You and Yours

Doctors Vote on Eighteenth Amendment.

At the Roanoke meeting of the Medical Society of Virginia, last October, a resolution was adopted by the House of Delegates, calling for an expression of opinion by its members, on the repeal of the Eighteenth Amendment to the Constitution of the United States. It was voted that this Society should submit the question to its members, with a ballot marked For or Against the Repeal of the Eighteenth Amendment, with the request that the ballot be marked and returned to the Secretary of the Society. The Secretary was further instructed to tabulate the vote and submit the result thereof to the President of the Society and give the same to the press. The questionnaire was submitted to 1,851 members, the few in foreign mission fields being eliminated because of distance. The letters brought notices of deaths of three members so that our report is based on 1,848 members, as follows:

For Repeal	931
Against Repeal	369
Cards returned without expression of opinion	12
Desire expressed for modification (this word not being used on ballot)	50
Total voting	1,362

This leaves a total of 486 from whom no answer had been received at time of going to press.

The State Conference on Childhood and Youth,

Also known as the Governor's Conference on Childhood and Youth, was held in Richmond, November 23rd-25th, in connection with the annual meeting of the Cooperative Education Association. This was called by Governor Pollard, in keeping with a request made by the officials of the White House Conference that the Governor of each State call such a conference. So great was the interest manifested, that we asked Mr. J. H. Montgomery, executive director of the Cooperative Education Association of Virginia and secretary of this Conference, to give us a report incorporating the objectives agreed upon by the four general committees in charge of the Conference: the Committee on Education, the Committee on Health and Medical Service, the Committee on Character and Civic Education, and the Committee on Welfare. This excellent report, to which we wish to call the attention of all our readers, appears in our Miscellaneous Department on page 684, of this issue of the MONTHLY.

The Mid-Tidewater Medical Society

Will meet at the Citizens Exchange Bank Building, West Point, on Tuesday, January 26th, with the business session beginning at eleven o'clock followed by lunch and a scientific program beginning at 2 P. M. Those scheduled to appear on this program, all of the school of medicine of the Medical College of Virginia, Richmond, are as follows: Dr. I. A. Bigger, Infections of the Hand and Forearm; Dr. Lee E. Sutton, Jr., The Schick Test and Immunization for Diphtheria; Dr. H. Hudnall Ware, Jr., Observations on the Rabbit Ovulation Test for Pregnancy; and Dr. William B. Porter, Classification and Therapy of the Anemias.

Dr. R. D. Bates, Newtown, is president and Dr. M. H. Harris, West Point, secretary of the Society.

The Southern Surgical Association

Held its annual meeting at the Greenbrier Hotel, White Sulphur Springs, W. Va., December 8th-10th, under the presidency of Dr. Hugh. H. Trout, of Roanoke, Va., who took as the subject of his Presidential address "Surgical Treatment of Pulmonary Disease." Over one hundred were in attendance and a large number of papers were read, nearly all of which were discussed and many of them illustrated with lantern slides.

At the annual dinner, the toastmaster, Dr.

Stuart McGuire, of Richmond, introduced the principal speaker, Dr. William J. Mayo, of Rochester, Minn., and related an interesting account of his first visit to the Mayo Clinic, many years ago, in order to find out the truth about gall-bladder disease. Dr. Mayo's subject was "The Influence of Southern Surgeons on My Professional Career," and he made this the occasion for paying high tribute to a number of our prominent Southern surgeons.

It was decided to hold the next meeting on December 13, 14 and 15, 1932, at Miami, Fla., and Dr. R. S. Cathcart, Charleston, S. C., was elected president. Drs. Harvey B. Stone, Baltimore, and Isidore Cohen, New Orleans, were elected vice-presidents, and Drs. Julius H. Taylor, Columbia, S. C., and R. L. Payne, Norfolk, Va., were re-elected treasurer and secretary, respectively.

News From University of Virginia, Department of Medicine.

On November 20th Dr. Kenneth Maxcy gave a lecture at the Army Medical School in Washington on the subject of Typhus.

The following members of the Medical Faculty attended the meetings of the Southern Medical Association in New Orleans from November 18th to 20th: Drs. L. T. Royster, W. H. Goodwin, E. P. Lehman, D. C. Smith, V. W. Archer, J. E. Wood and F. D. Woodward. Dr. William H. Goodwin gave a paper on Endometriosis; Dr. J. Edwin Wood on Treatment of Heart Block with especial reference to the use of Ephedrine Sulphate; and Dr. Vincent W. Archer on The Use of Roentgenograph in Undergraduate Teaching. As Chairman of the Section on Ophthalmology and Otolaryngology, Dr. Fletcher D. Woodward gave an address on Survey of Otolaryngology.

Dr. Lawrence T. Royster was chairman of the sub-committee on The Medical Care of Children for the Governor's Child Welfare Conference held in Richmond on November 24th. Dr. W. W. Waddell read a paper on The Hospital and The Sick Child; Dr. Kenneth Maxcy on Prevention of Communicable Diseases; Dr. D. C. Wilson on Need for Research on Mental Hygiene.

Dean J. C. Flippin attended the meetings of The Association of American Medical Colleges in New Orleans from November 30th to December 2nd.

At the meeting of the University of Virginia Medical Society on November 7th, Dr. C. C. Speidel gave an account of his Studies of Living Nerve Sprouts; Dr. L. S. Meriwether spoke on Medulloblastomas; and Dr. Paul Kells described A Case of Acute Myelitis.

Medical College of Virginia News.

Dr. Albert D. Kaiser, associate professor of pediatrics at the University of Rochester school of medicine and dentistry, was a visitor of Dr. Lee E. Sutton, Jr., at the Medical College of Virginia on December 8th.

Dr. Lee E. Sutton, Jr., acting dean of the school of medicine of the Medical College of Virginia, represented the college at the annual meeting of the Association of American Medical Colleges at New Orleans.

Dr. William B. Porter, Dr. I. A. Bigger, and Dr. Pauline Williams, of the Medical College of Virginia, attended the meeting of the Southern Medical Association in New Orleans recently. Dr. Bigger read a paper on "Wounds of the Pericardium and Heart" which was discussed by Dr. Porter. Dr. Williams led the discussion on "Thrombopenic Agranulocytopenia," a paper presented by Dr. Roy Krocke, of Emory University.

Dr. Trevor Arnett, president of the General Education Board of New York city, was a visitor at the Medical College of Virginia last month. Dr. Arnett was accompanied by Mr. Jackson Davis of the board.

Mr. J. R. McCauley, secretary-treasurer of the Medical College of Virginia, attended the meeting of the Association of Eastern College Business Officers at Harvard University recently.

Dr. Augustine Tucker, of Shanghai, China, addressed the junior and senior medical classes of the Medical College of Virginia on December 2nd. Dr. Tucker is a surgeon in the St. Luke's Hospital in Shanghai and is connected with the medical school of St. John's University of the same place.

Classes at the Medical College of Virginia will suspend from December 19th to January 4th for the Christmas holidays.

The library of the Medical College of Virginia has been enriched by a gift of approximately a hundred books of historical value, treating of the development of medicine and surgery. The books were given the college by the trustees of the Valentine Museum and have been collected with care through a long period of years by members of the Valentine family. Some of the books were at one time in the private collection of Dr. Augustus Warner, one of the founders of the college. A volume of unusual interest, *The History of Anatomy from Ancient Times*, by Alexander Monroe, of Edinburgh, Scotland, is dated 1745 and is in manuscript, though arranged in the form of a printed book and indexed. This is handsomely bound and was once the property of Dr. William Foushee, a leading citizen and physician of Richmond in the earlier decades of the last century.

An increase of more than a thousand patient visits made during the month of November to the out-patient department of the Medical College of Virginia as compared with November of 1930 is shown in the report of the director. There were 4,433 patient visits for the month; the maximum number for one day was 246, the minimum 184. There were 1,378 laboratory examinations made.

The program of the regular monthly scientific meeting of the faculty and staff of the Medical College of Virginia, which will be held Thursday, January 21, 1932, at 8:15 P. M. in the auditorium of the St. Philip dormitory, follows: Skeletal Traction in the Treatment of Fractures, Dr. James T. Tucker; Fracture of the Femur, Case Reports, Dr. A. H. Bell; Tumors of the Duodenum, Dr. E. Lee Shiflett.

The profession is cordially welcomed to these meetings.

News Notes From the Duke University School of Medicine and Duke Hospital.

On November 20th the Beta Epsilon Chapter of the Phi Beta Pi Fraternity was installed, with twenty-four students of the medical school as members, and the Beta Nu Chapter of the Alpha Kappa Kappa Fraternity, with eighteen students of the medical school as members.

Dr. E. J. Van Liere, Professor of Physiology at the University of West Virginia, and Dr. Lawson G. Lowry, of the Commonwealth Fund, New York City, gave lectures in the hospital amphitheatre, on the morning of November 21st.

Dr. Wm. H. Gantt, Psychiatrist at The Johns Hopkins Hospital, lectured in the amphitheatre on November 24th on Conditioned Reflexes.

On December 4th and 5th post-graduate clinics were held at the Duke Hospital by the members of the hospital staff, to which the doctors of the state were invited.

Dr. Charles H. Mayo addressed the staff and students of the medical school and hospital, on December 12th, on the subject of endocrinology.

Dr. John Rathbone Oliver, Associate Professor in the History of Medicine in The Johns Hopkins University, delivered on December 14th and 15th two lectures at the Duke Hospital, "Medicine from the Standpoint of History" and "Greek Medicine and Its Development."

Washington Selected as Place for Next Meeting of American Public Health Association.

The 200th anniversary of the birth of George Washington will be celebrated during 1932 with appropriate ceremonies in Washington, D. C. To participate in various features of the celebration, many associations have decided to hold their annual conventions in Washington next year. The American Public Health Association, oldest and strongest organization of its kind on the continent, is one of those. Its sixty-first annual meeting will be held in Washington from October 24th to October 27th. The Willard Hotel will be headquarters.

The annual meetings of the American Public Health Assocation attract an attendance of about 2,000 from every state in the Union, from Canada, Mexico and even from abroad. The scientific programs are planned to interest

health officers, nurses, food and nutrition experts, sanitary engineers, school physicians, directors of hospitals, laboratories and clinics, child and industrial hygienists, and specialists in all branches of public health.

The Program Committee will begin its work at a meeting to be held in New York early in January.

The Local Committee in Charge of Local Arrangements has already begun to function, under the direction of the General Chairman, Dr. William C. Fowler, Health Officer of Washington.

Additional information may be obtained from the office of the American Public Health Association, 450 Seventh Avenue, New York, N. Y.

Dr. Robert H. Courtney,

Richmond, Va., was elected president of the local chapter of Duke University Alumni, recently held in this city.

Guests Appear Before Clinical Society of the New York Polyclinic Medical School and Hospital.

Dr. James Alexander Miller, New York, read a paper on Recent Advances in our Knowledge of Tuberculosis (by invitation) at the last meeting of the Clinical Society of the New York Polyclinic Medical School and Hospital on Monday, January 4, 1932, at 8:30 P. M.

Dr. Howard Lilienthal, New York City, by invitation also presented a paper on this occasion, his subject being Some Aspects of the Surgery of Pulmonary Tuberculosis.

The American College of Surgeons

Has selected October 17th-21st as the dates for the 1932 meeting of its Clinical Congress in St. Louis, Mo.

Annual Report of the Public Health Service.

Surgeon-General H. S. Cumming has just submitted to Congress the annual report of the United States Public Health Service for the past fiscal year.

One of the important public health duties of the Federal government is the prevention of the introduction and spread of infectious diseases from foreign countries. As heretofore, during the past year there was a constant interchange of sanitary information with other nations of the world. International sanitary agreements have operated to improve the promptness and competeness of the information relating to the prevalence of disease received from foreign governments.

In protecting the United States from the importation of dangerous diseases, 18,372 vessels, 934,780 passengers, and 1,275,061 seamen were inspected on arrival at domestic and insular ports, by quarantine officers, and 761,436 alien passengers and 916,868 alien seamen were examined by medical officers under the immigration law.

Reports of the prevalence of communicable diseases received by the Public Health Service from state health officers and preliminary reports of deaths from several sources indicate that the health record for the United States for the calendar year 1930 was exceptionally good. The record for the first half of the year 1931 was also generally good, although an epidemic of mild influenza during the early months of 1931 increased the death rates for a time and gave the year an inauspicious beginning.

The prevalence of typhoid fever has been decreasing in the United States since comparable yearly statistics of cases and deaths have been available. An increase was reported during the last six months of 1930, however; in some states it was thought to be influenced by the drought conditions which resulted in the pollution of water supplies or necessitated the taking of drinking water from new or unknown sources.

Congress made available to the Public Health Service, through an act approved February 6, 1931, the sum of $2,000,000 for emergency health work in the drought stricken areas. In carrying out this work, a modification of the plan used for the regular cooperative rural sanitation activities was adopted, with the result that details of administration were quickly worked out with the states and field work was under way within a short time. By the end of the fiscal year, there were in operation in the sixteen states within the drought areas 333 field organizations, including work covering 395 counties. It is believed that many of the temporary units organized for this work will serve to stimulate the establishment of permanent health departments supported with local funds in the future.

A significant change affecting the individual Federal prisoner occurred during the past fiscal year. Under the act of Congress approved May 13, 1930, the Public Health Service in-

augurated a system for supervising and furnishing medical and psychiatric services for Federal prisoners.

The personnel of the Public Health Service consisted of a corps of medical, dental, sanitary engineer and pharmacist officers, nurses, specialists and other technical and non-technical employees. At mid-year, the personnel consisted of 1,094 medical officers and other persons of scientific ratings, and 3,661 general technical employees.

Dr. Philip E. Rossiter,

Recently Medical Officer of the James River Fleet and stationed at Lee Hall, Va., has moved to Chemung, N. Y., where he has gone into private practice.

Commissioned in Medical Corps Reserves.

Drs. R. A. Nichols, Jr., and Thos. Boyd Washington, of Richmond, and Dr. Wilmer Howard Paine, Charlottesville, Va., have been appointed first lieutenants in the Medical Corps Reserves.

Dr. Beverley R. Tucker,

Richmond, Va., was elected first vice-president of the Association of Seaboard Air Line Railway Surgeons, at its meeting in Miami, Fla., early in December. The Virginia members of the executive board are Drs. Joseph D. Collins, of Portsmouth, and L. S. Early, of Petersburg.

Association of American Medical Colleges.

At the annual meeting of this Association in New Orleans, November 30th, and December 1st and 2nd, a number of subjects of special interest to those connected with our medical schools were discussed. Those from Virginia who attended were Dr. Lee E. Sutton, Medical College of Virginia, and Dr. J. C. Flippin, University of Virginia.

Dr. Louis B. Wilson, dean of the University of Minnesota Graduate School of Medicine, was elected president for the coming year; Dr. H. G. Weiskotten, of the Syracuse (N. Y.) University College of Medicine, vice-president; and Dr. Fred C. Zapffe, Chicago, was re-elected secretary. The 1932 meeting will be held in Philadelphia.

New Nurses Home for Stuart Circle Hospital.

On the afternoon of December the 14th, the new Nurses Home of Stuart Circle Hospital, Richmond, Va., was formally opened. On this occasion, the Board of Directors of the Hospital, their wives, Miss Charlotte Pfeiffer, superintendent, and other members of the Hospital Staff received and entertained a large number of friends and showed the visitors over the new building. All of the rooms and appointments are in excellent taste and everything has been arranged with a view to the comfort of the nurses and to making the building a real "home" for them. In the basement is a study hall which may also be used for an amusement room. The first floor contains a large and several small reception rooms, suites for the superintendent and her assistants, and the two upper floors have a number of single and double rooms for student nurses. The color scheme is different on the two floors. The committees in charge of building and furnishing the building are to be congratulated upon the success of their work and the nurses upon being so splendidly housed.

Prize Offered by American Association for the Study of Goiter.

The American Association for the Study of Goiter again offers an award of Three Hundred Dollars ($300.00) for the best essay based upon original research work on any phase of goiter presented at their annual meeting in Hamilton, Ontario, Canada, June 14, 15, and 16, 1932. It is hoped this offer will stimulate valuable research work, especially in regard to the basic cause of goiter.

Competing manuscripts must be in English and in the hands of the Corresponding Secretary, J. R. Yung, M. D., Rose Dispensary Bldg., Terre Haute, Ind., not later than March 15, 1932. Manuscripts arriving after this date will be held for the next year or returned at the author's request.

The first award of the 1931 Kansas City, Mo., meeting was given Dr. Bruce Webster, Presbyterian Hospital, New York City, "Studies in the Etiology and Nature of Simple Goiter as Produced Experimentally in Rabbits."

Honorable mentions were awarded as follows: Drs. W. H. Cole and N. A. Womack, St. Louis, "Experimental Production of Pathologic Lesions of the Thyroid Gland by Infective Means." Drs. J. Lerman and J. H. Means, Boston, "The Gastric Secretion in Exophthalmic Goiter and Myxoedema." Dr. C. O. Rice, Minneapolis, "Life Cycle of the Thyroid Gland in Minnesota."

The American Board for Ophthalmic Examinations

Will hold an examination in New Orleans, La., on Monday, May 9, 1932, at the time of the meeting of the American Medical Association.

Necessary application blanks for this examination can be procured from the secretary, Dr. William H. Wilder, 122 South Michigan Avenue, Chicago, Ill., and should be sent to him at least sixty days before the date of the examination.

Dr. Allen H. Moore,

Formerly of New Market, Va., but who has been practicing in Doylestown, Pa., for several years, has been elected president of the Bucks County (Pa.) Medical Society, for the coming year. He was also made editor of the Bucks County Medical Bulletin. Dr. Moore is assistant visiting dermatologist to the Abington Memorial Hosptial, Abington, Pa.

Safeguarding Swimming Pools.

Winston-Salem, N. C., requires all its swimming pools, whether under municipal or private control, to be in charge of trained Red Cross life-savers, according to the *Red Cross Courier*. The directors of recreational camps for boys from that city report that it is now unusual for a boy over ten years of age to come to camp unable to swim. During 1930 the five municipal pools were used by more than 59,000 men, women, and children.

Health Lectures.

The Health Education Foundation of the Academy of Medicine of Cleveland, Ohio, is again making a contribution to the public health in that community by presenting to the public on Sunday afternoons in Severance Hall, Euclid Avenue and East Boulevard, three health lectures on subjects of interest to the general public.

The first of these lectures was given December 6th, on "What Science Knows About Cancer," by Elliott C. Cutler, M. D., Professor of Surgery, Western Reserve University.

The other lectures scheduled are for Sunday afternoon, January 17th, 3 P. M., "Why Think About Eating?", by Henry J. Gerstenberger, M. D., Professor of Pediatrics, Western Reserve University, and

Sunday afternoon, March 20th, 3 P. M., "Fighting Death After Forty," by R. W. Scott, M. D., Professor of Clinical Medicine, Western Reserve University; and Chief of Medical Division, City Hospital.

These lectures are made possible this year by a gift to the Health Education Foundation from the S. M. A. Corporation of Cleveland. The general subject of the talks is "A Second Series on Life in a Strenuous Age."

Vacancies to be Filled in 41st General Hospital (Reserve).

Colonel Gerald A. Ezekiel, Medical Reserve Corps, Commanding the 41st General Hospital, announces that he is desirous of completing the Medical and Surgical Staff of this organization. There are about twenty-five vacancies. A General Hospital corresponds to what was known during the World War as a Base Hospital. This unit cares for one thousand patients. The 41st General Hospital will only function as such in the case of a National Emergency; otherwise the duties of the officers will only consist of taking such Army Extension Courses, as they are able, and attending camp, if they so desire about once in every two to three years.

Any physician of good standing and proper physical condition, under the age of thirty-five is eligible for appointment as first lieutenant Medical Reserve Corps. Any physician who held a commission during the World War, if physically fit, can be reappointed in the grade and rank he last held.

All interested will please communicate with Col. G. A. Ezekiel, Med. Res., 1652 W. Grace St., Richmond, Va.

New York Acquires Another Tuberculosis Hospital Site.

Dr. Thomas Parran, Jr., State Commissioner of Health of New York, announces that Governor Roosevelt has approved the acquisition of the second of the three sites for state tuberculosis Sanatoria authorized by the last Legislature. The new site located north of the city of Oneonta, N. Y., is approximately 1,500 feet above sea level and commands an attractive view of the Susquehanna valley. It consists of approximately two hundred acres, the topography of which lends itself admirably to a tuberculosis hospital development. This proposed hospital is intended to serve seven counties.

Dr. and Mrs. Warren T. Vaughan

Have returned to their home in Richmond,

Va., after spending several weeks in England and on the Continent.

Southern Medical Association.

The meeting in New Orleans in November was one of the most interesting and largest in the history of that organization. There was a registered attendance of about 1,700 physicians, with a grand total of over 2,500 including the ladies, medical students, and those with exhibits.

Birmingham, Ala., headquarters of the Association, was selected as the 1932 place of meeting. Officers for the coming year are: President, Dr. L. J. Moorman, Oklahoma City, Okla.; vice-presidents, Dr. Frederick L. Fenno, New Orleans, and Dr. Charles Hartwell Cocke, Asheville, N. C. Mr. C. P. Loranz, Birmingham, was re-elected secretary-manager for a term of five years; Dr. M. Y. Dabney, Birmingham, editor of the Journal, and Mrs. Eugenia B. Dabney assistant editor, both for a term of three years. Dr. Homer Dupuy, New Orleans, was elected chairman of the Council, and Dr. C. C. Bass, New Orleans, chairman of the Board of Trustees.

Dr. William B. Porter, Richmond, Va., was elected vice-chairman of the Section on Medicine for next year, and Dr. D. C. Smith, University, Va., was elected secretary of the Section on Dermatology and Syphilology.

Dr. James W. Davis,

Statesville, N. C., medical director of the Statesville Hospital, has been elected president of the Iredell-Alexander (N. C.) Medical Society for the coming year.

Annual Report of the Surgeon-General, U. S. Navy.

This report discusses the activities of the Medical Department of the Navy during the fiscal year ending June 30, 1931, and gives the statistics dealing with the health of the Navy for the calendar year ending December 31, 1930. The statistics for the calendar year 1930 show a distinct improvement in practically every phase of the health of the Navy. The general admission rate was lower than that for any previous year since 1913; the number of sick days per person was smaller than for any previous year since 1914, except 1917 and 1925. The death rate was lower than any previous rate since 1913, except 1922 and 1926. Drowning, usually the leading cause of death, dropped to second place with a lower rate than any preceding year since 1887, the first year in which complete statistics were published. There was no major disaster and in aviation the rate of fatalities was lower than ever before. The prevalence of communicable disease was lower, there being only one epidemic of any consequence—dysentery among the forces afloat, in March and April, in the Guantanamo area.

On July 1, 1931, there were 924 commissioned officers in the Medical Corps of the Navy and three acting assistant surgeons. During the year, seventy-five new medical officers were commissioned, while forty-six were separated from the service—thirty-two by resignation, ten by retirement, and four by death. There were 295 candidates authorized to appear for examination for appointment in the Medical Corps in January, 1931. Of this number, 116 were found qualified for appointment but only seventy-five could be commissioned.

Pellagra Preventive Value of Certain Canned Vegetables.

The United States Public Health Service has recently completed a study of the pellagra preventive potency of canned spinach, canned turnip greens, mature onions and canned green beans. These studies are of value, as they indicate the efficacy of these vegetables in the prevention of pellagra.

Canned spinach supplies the pellagra-preventive vitamin, but cannot be regarded as especially rich in it. It is, however, considered an important contributory source of this factor. Canned turnip greens supply the pellagra preventive vitamin and, at least in liberal quantity, adequately supplement an otherwise pellagra-producing diet. This substance meets many of the requirements of a practical and effective dietary supplement in the pellagrous sections. The mature onion is a very poor source of the pellagra-preventive vitamin. Canned green beans are, relatively, a poor source of the pellagra-preventive vitamin.

Dr. T. Brantley Henderson,

Formerly of Richmond, Va., but lately of Goldsboro, N. C., after retiring from practice for two years on account of illness, resumed his work in diseases of the eye, ear, nose and throat, the first of January. He is now located at Williamsburg, Va., where three of his children are attending the College of William and Mary. Dr. Henderson is an alumnus of the Medical College of Virginia, of the class of '06.

Civil Service Examination.

The U. S. Civil Service Commission, Washington, D. C., anounces open competitive examination for Junior Medical Officer (Interne), applications for the position to be on file with the Manager of the Fourth U. S. Civil Service District, Washington, D. C., not later than January 19, 1932.

For Sale—

One Office Chair-Table with stainless steel top. Gear control. First-class condition. Reasonable price. Address "C. T.." care this journal. (*Adv.*)

For Sale—

New Castle "Rochester" Autoclave—full automatic electric—on stand. Floor space 21x25 inches. Address replies to No. 316, care this journal. (*Adv.*)

Location With Great Future For Sale.

This location is in Buchanan County, Va., which is one of the richest undeveloped coal. oil and gas fields in the East. There is a new railroad into the county and many plans now on the way to develop the coal as well as the oil and gas. Only one other physician in the county. This is a good chance for some one to be in on the "ground floor." Reason for selling is to be able to specialize. This is also a good location for a hospital. If interested, write to Box 27, Grundy, Va. (*Adv.*)

For Sale—

"National" Gasoline Autoclave, 22x24 inches; also a Rotary Converter from direct current to alternating current. In first-class condition. Address replies to "H," care the Virginia Medical Monthly. (*Adv.*)

Hourly Nursing Service.

The Private Duty Nurses Club of Richmond, Va., announces the inauguration of an Hourly Nursing Service, in which its members are subject to call for service in all branches of the work that can be adequately performed in the home, at the following rates: $1.50 for first hour or less, and 50 cents for each additional hour or fraction thereof.

The Club realizes that due to the present economic situation there is a pressing need for a service of this kind in Richmond, which has heretofore been furnished only by the I. V. N. A. The adoption of a similar movement will render a distinct service to the people who do not care for or cannot afford a full time nurse. It will also help to solve the unemployment situation among the members of the Private Duty Nurses Club.

For information, dial 3-1656. (*Adv.*)

Assistantship Wanted

By recent graduate who has served internship, had six months' graduate work, and one year's experience in general practice. Address "L. W. H.," care this journal. (*Adv.*)

Obituary Record

Dr. Reid White, Sr.,

Prominent and beloved physician of Lexington, Va., died November 29th, after an illness of more than two years. He was sixty-four years of age and graduated from the University of Pennsylvania, School of Medicine, in 1892. Dr. White was attending physician of Washington and Lee University. As a mark of respect classes were suspended at that school during his funeral services. He was also surgeon to Virginia Miltiary Institute. Dr. White had served on the town Council of Lexington and was a director of the First National Bank of that city. He served in the army with the rank of Major during the World War. Dr. White had been a member of the Medical Society of Virginia for thirty-five years. His wife, a daughter, and two sons, Drs. Reid White, Jr., and Preston White, survive him.

Resolutions on Death of Dr. E. T. Hargrave.

Whereas, The Norfolk County Medical Society has learned with profound regret of the death of their beloved and esteemed past president, Dr. Edward T. Hargrave; therefore, be it

Resolved. That in the death of Dr. Hargrave, the Norfolk County Medical Society has lost a valuable member, a physician who upheld the best traditions of our calling in skill, character and love for mankind. His high character, gentle courtesy, and profound sense of honor, combined with his ready wit and genial personality, endeared him to all who knew him. A God-fearing gentleman and physician has passed.

That a page be set aside in the minute book of this society dedicated to his memory;

That a copy of these resolutions be sent to his family with our sincerest sympathy;

That these resolutions be published in the Norfolk daily papers, and the Virginia Medical Monthly.

C. Lydon Harrell, *Chairman*,
Harvie S. Baker,
Robert C. Whitehead,
Committee.

December 3, 1931.

The staff of the Norfolk Protestant Hospital passed the following resolutions on the death of Dr. Hargrave:

Dr. Edward T. Hargrave, on December first, passed from life to what we call death. His name will be erased from the roster of the Norfolk Protestant Hospital Staff, yet it will ever remain written in a book of gold "as one who loved his fellowman."

While held in highest esteem by his associates because of his professional attainments, he was best known as "Friend" and "Dispenser of Cheer."

Those who had glimpsed his home life knew he kept from the world the fullest and sweetest notes of the song of life for "her." These were never heard save in the little home, where he was affectionately known as "Tim."

"He sang of Joy; what'er he knew of sadness
He kept for his own heart's peculiar share;
So well he sang, the world imagined gladness
To be sole tenant there."

"'Feelin' fine' he used to say
Wave his hand an' go his way.
Never had no time to lose
So he said, fighting blues.
Had a twinkle in his eye
Always when a-goin' by,
Sort o'smile up into mine,
Tell me he was 'feelin' fine.'

"'Feelin' fine' he'd allus say
An' the' sunshine seemed to stay
Close by him or else he shone
With some sunshine of his own.
Didn't seem no clouds could dim
Any happiness for him,
Allus seemed to have a line
Out f'r gladness—'feelin' fine.'

"'Feelin' fine,' I've heard him say
Half a dozen times a day,
An' as many times I knowed
He was bearin' up a load.
But he never let no grim
Troubles git much holt on him,
Kep' his spirits jest like wine
Bubblin' up an' 'feelin' fine.'"

"When Earth's last picture is painted and the tubes are twisted and dried,
When the oldest colors have faded, and the youngest critic has died,
We shall rest, and, faith, we shall need it; lie down for an aeon or two,
Till the Master of all Good Workmen shall set us to work anew."

Resolved, By the Staff of the Norfolk Protestant Hospital, that in the death of Doctor Hargrave, this Institution has lost a loyal friend and the Staff has lost a wise counselor.

Resolved, That we register our approval of the example he has set in never failing professional courtesy and the signal spirit of helpfulness to the younger men of our profession.

Resolved Further, That these resolutions be spread upon our minutes and copies furnished his family, the Norfolk daily press and the Virginia Medical Monthly.

C. W. Doughtie, M. D.,
C. J. Andrews, M. D.,
L. F. Magruder, M. D.,
Committee.

Dr. Percy Kline Graybill

Died at his home in Fincastle, Va., December 5th, after having been in ill health for twelve years. He was fifty-one years of age and graduated from the University College of Medicine, Richmond, in 1903. Dr. Graybill was a native of Botetourt County, Va., but had spent several years in Arizona on account of his health. He had been a member of the Medical Society of Virginia for twenty-five years and had served as Councilor from the Tenth District.

Dr. Clarence Chilton Pearce,

Pennington Gap, Va., died on December 1st, death being due to pneumonia. He was forty-seven years of age and a graduate in medicine from the University of Louisville School of Medicine in the class of '06. His mother and two brothers survive him.

Resolution on Death of Dr. C. C. Pearce

The Lee County Medical Society, at a meeting on December 14, 1931, passed the following resolutions on the death of Dr. Pearce:

Whereas, It has seemed good to an overruling and wise Providence to remove by death our friend and fellow, Dr. C. C. Pearce, from our midst.

It is resolved that we, the Lee County Medical Society, do hereby express our heartfelt sympathy for the grief occasioned to his loved ones and regret the loss sustained by us.

As a member of the Medical Profession, we recall the valuable contribution which issued from his knowledge and acquired art as a practitioner.

And as a colleague, we are reminded of his fraternal co-operation and we shall miss the wisdom of his counsel in consultation and in the deliberations of the Society. Be it further

Resolved, That a copy of these resolutions be filed on record upon the minutes of the Society, a copy of the same be published in the local paper, and also a copy sent to the relatives of the deceased.

W. H. Bruce, M. D.,
W. J. Innes, M. D.,
Committee.

Dr. Robert C. Meade,

Castlewood, Va., died October 10th, at the age of sixty-four. He graduated from the College of Physicians and Surgeon, Baltimore, in 1892.

Dr. Walter A. Richeson

Died November 23rd at his home in Amherst, Va., after ten days illness of pneumonia. He was seventy years of age and received his medical degree from the College of Physicians and Surgeons, Baltimore, in 1883. His wife and two children survive him.

Dr. Benjamin B. Wheeler,

Former Chief Surgeon of the C. & O. Hospital, Clifton Forge, Va., died at his home in Charleston, W. Va., November 3rd, after an illness of seven months. He was born in 1876 and graduated from the Louisville Medical School, Louisville, Ky., in 1904. His wife survives him.

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WHOLE No. 956.

RICHMOND, VA., FEBRUARY, 1932

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(6 Servings)

	Grams	Pro.	Fat	CHO	Cal.
1 tablespoonful Knox Sparkling Gelatine....	7.	6.	....	....	.....
¼ cup cold water.....	....	....	....	....	.....
1 cup milk.....	240.	7.5	10.	12.	.....
¾ cup water.....	....	....	....	....	.....
2 eggs.....	100.	13.	10.5	....	.....
1½ teaspoonfuls vanilla.	....	....	....	....	.....
1 tablespoonful sugar...	8.	....	....	8.	.....
	....	26.5	20.5	20.	370.5

Soak gelatine in cold water. Heat ¾ cup water and milk—add gelatine and stir until dissolved. Separate eggs and beat yolks to lemon color. Pour hot gelatine mixture slowly into egg yolks, cook over hot water until mixture begins to thicken, stirring constantly. Remove from stove, add salt, and flavoring. Cool. When nearly set fold in whites of eggs which have been beaten stiff. Mold and chill.

LEMON DESSERT

(6 Servings)

	Grams	Pro.	Fat	CHO	Cal.
1½ tablespoonfuls Knox Sparkling Gelatine....	10.	9.	....	....	.....
¼ cup cold water.....	....	....	....	....	.....
2¼ cups hot water.....	....	....	....	....	.....
Grated rind 1 lemon.....	....	....	....	....	.....
4 tablespoonfuls lemon juice.....	40.	....	....	4.	.....
2 tablespoonfuls sugar...	16.	....	....	16.	.....
	....	9.	....	20.	116

Soak gelatine in cold water. Add lemon rind to water while heating to boil. Pour over the soaked gelatine to dissolve it. Add lemon juice and sugar; stir until sugar is dissolved. Strain into molds and chill.

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INTER-RELATIONSHIPS BETWEEN CURATIVE AND PREVENTIVE MEDICINE.*

W. F. DRAPER, M. D., Richmond, Va.
State Health Commissioner.

In making my initial appearance before the Medical Society of Virginia I am fully aware of the responsibility which rests upon me, for without the sympathetic understanding and the genuine interest and support of the medical profession of the State I shall fail to accomplish more than a small part of the work which devolves upon the office of State Health Commissioner. This responsibility is the greater because of the high ideals and standards established by my illustrious predecessor who held not only the esteem and confidence of his medical colleagues but who occupied a place in their hearts and affections which if ever approached by another can come only after many years of devoted service and close personal association.

I assume naturally that you are interested in knowing the views which I hold regarding relationships between public health and curative medicine and in being advised as to some of the general policies and principles which are to be followed in the administration of the State Department of Health. While thus far I have had but limited opportunity for intimate contact with the medical problems of the State, I am confident from what I already know that they are much the same as in the country as a whole. It is no doubt true that in Virginia as elsewhere the increasing development of organized local health services and the expansion of public health activities have aroused the apprehension of physicians engaged in private practice. Diagnostic and treatment clinics are being held. Physical examinations are being made and free advice is being given in child health centers. Immunization work is being carried on for the prevention of smallpox, diphtheria, and typhoid fever, and various other functions are being performed by health departments which are looked upon askance by many members of the profession.

The present situation has been brought about by the rapid increase in our knowledge of preventive medicine and by the great advances which have been made in public health organization and administration. In addition the public has become better informed regarding the possibilities of health protection and health promotion and is making an insistent demand that it receive the benefits of measures that it is now thoroughly convinced will be to its advantage collectively and individually. The march of events has been so rapid that the relationship between curative medicine and public health has undergone a radical change and there has not yet been time to work out a plan of readjustment whereby the various functions may be assigned to the agencies which should be best qualified to receive them and carry them on with the greatest efficiency and satisfaction. A frank recognition of the problems which confront us and an earnest cooperative effort on the part of public health officials and practicing physicians to determine the limitations, responsibilities and functions of both groups would seem to offer the greatest promise of effecting a satisfactory readjustment.

The several committees of the State Medical Society whose functions are to advise and cooperate with the State Department of Health in special phases of the public health program have been invaluable in the services they have rendered. Your Maternal Welfare Committee and your Child Welfare Committee especially have been consulted at frequent intervals, and their members have given generously of their time and experience in aiding in the development of sound practical policies, and in reviewing our literature dealing with child welfare and maternity work to insure accuracy before publication. The basis of un-

*Read at the sixty-second annual meeing of the Medical Society of Virginia, in Roanoke, October 6-8, 1931.

derstanding which has been reached is most gratifying and encouraging. I earnestly hope that these cooperative relationships may be continued on an increasing scale. I believe there is fair promise that the Medical Society will receive full value for the time and effort expended in reaching a thorough understanding and seeking solutions of problems by these means.

As indicative of some of my own views which might serve as a basis of discussion with the proper committees of the Society I may say that I readily concede that diagnostic and treatment clinics, immunization work, and many of the activities conducted in health centers might very properly be carried on through the instruments of curative medicine rather than by public health departments. But they must and should be carried on from some source, and until a better way is found the health department must continue to do this work. When we come to analyze the matter, present methods may not prove as bad as they are sometimes made to appear. For example, the child health clinics conducted by health departments have received much unfavorable criticism. It is held by some physicians that they take business away from the doctor; that they accept persons who have no right to receive such service; that they engage in unjustifiable treatment of the sick; and that they tend to destroy confidence in the medical profession in the community. The facts, however, do not bear out these statements. A properly conducted health center for well children invariably creates a demand in the community for additional service, and experience has shown that private practice among physicians qualified to render the type of service desired by their clientele has increased markedly in every instance. What has done more, for example, to create a demand for prenatal services from doctors than the educational work conducted in public health clinics, and what influence has been of so great value in opening fields for better practice and for new lines of practice? While I should not be loath to turn the various health clinics over to the practicing physicians when they are prepared to assume the responsibility, I cannot but feel that they are a definite asset to the profession even under existing conditions.

The charge that child health clinics frequently assume responsibility for the treatment of sick patients, however, is one that deserves serious consideration. The treatment of the sick is not a function of a prophylactic and educational clinic and wherever this practice has been followed it has been bitterly resented by physicians who in my opinion are thoroughly justified in the position they have assumed. I can assure you that in Virginia there is a standing order that no county health officer or other public health official who is in any way responsible to the State Department of Health shall administer treatment to the sick or give medical advice. It is sometimes difficult to turn away sick children who are brought to well baby clinics but the principle must be maintained and there are other means for the handling of such cases.

Immunization work as conducted by public health departments has also come in for its share of criticism. The law requires that the health department should do everything within its power to prevent the spread of communicable diseases and the health officer is in duty bound to utilize to the fullest advantage all effective means toward this end. No one who understands will question the desirability of having every child immunized against diphtheria and smallpox, and this is a type of work that may be done both by public health officials and by private physicians. It is to the public health officer's advantage to secure the participation of the private physician to the fullest possible extent. I am confident that any physician could greatly enlarge his practice while rendering a valuable service to his patients and the State if he would instruct the mother soon after the birth of the child to bring it to him at regular intervals for observation, and tell her positively and definitely that he will immunize it against diphtheria at the age of six months, vaccinate it against smallpox at the age of twelve months and protect it against typhoid fever at the age of two years. I believe that patients would welcome such instructions and such service from their physicians. I recall an irate young mother of my acquaintance who conscientiously carried her baby to her physician every month for observation until it was a year old and then had it contract diphtheria from a neighbor's child. When another neighbor told her that her children had been immunized against diphtheria at a child health clinic, the young mother's expressions regarding the physician whom she had employed to safeguard her child and who

had made no reference to diphtheria immunization were what you may well imagine.

Numerous attempts have been made in Virginia and elsewhere to have all immunization work performed by private physicians, but with few exceptions the results have been disappointing. In one Virginia county where an active educational campaign was conducted by the State Department of Health over a period of several months to stimulate physicians and the public alike to see that the children were immunized against diphtheria, exactly eleven immunizations were recorded.

Another experience in one of the demonstrations of the Commonwealth Fund in Fargo, N. D., serves as an example of what has happened many times. In this instance the Commonwealth Fund in accordance with its policy to proceed entirely on the basis of a cooperative agreement with the medical profession arranged that the diphtheria immunizations should be done entirely by the private physicians. The board of health and the demonstration confined themselves to an educational effort to get people to take their children to their physicians, all of whom agreed upon a uniform fee for the service. No appreciable increase in the number of immunizations resulted, and the physicians finally decided that the public interest required that the service be rendered by the board of health without charge which was done apparently to the satisfaction of all concerned. The Director of the Commonwealth Fund states as his conclusion that the offer of free diphtheria immunization by the health department was accepted chiefly by those who would not have gone to the physician anyway, and that the educational work associated with the effort may likely have increased the number who went to private physicians.

Among the constructive suggestions which have recently come to my office from a group of physicians within the State is one which appears worthy of careful consideration. It proposes that the State furnish to the local physicians, free of charge, smallpox, diphtheria and typhoid immunizing material with the understanding that the physicians may charge patients able to pay for the immunization the same rates that they would pay if they came as private patients, and that the physicians give their services free to those who are unable to pay for them. If such a plan were adopted it would be the function of the State Department of Health to aid in informing persons throughout the State as to the desirability of securing the immunizations and advise them as to where and under what conditions they might obtain the service. This plan, if successful, would assure protection to a large proportion of our most susceptible population at a low cost to the public treasury and with reasonable compensation to the doctors for the services rendered. If the suggestion meets with the approval of the Medical Society as a whole we are prepared to submit to the budget committee an estimate for the purchase of the necessary material for use during the next two years, and if authorized we shall do everything within our power to make the plan a success.

From time to time complaints are received from local physicians concerning one phase or another of the immunization program. These are immediately investigated and in most instances a satisfactory understanding is reached. As stated heretofore I believe that careful joint consideration of the questions involved gives promise of developing more satisfactory methods of accomplishing the work and I hope that your efforts and mine along this line will have brought about an improvement in the situation by the time of the next annual meeting.

The code of ethics of the physician is such that it has been difficult for him to make active strides in taking advantage of the opportunities which are open to him in the field of preventive medicine. Sick people seek the physician, but well persons for the most part require at least the stimulus of a suggestion before presenting themselves for examination and advice. The dental profession has handled this matter very well and there has been no question as to the propriety of advising a semi-annual examination of the teeth of every patient. The system of periodic examinations has been adopted by many pediatricians and has met with favorable response on the part of the public. While I am aware of the considerations that have stood in the way of the advocacy by physicians of more preventive work, I cannot but believe that the vast majority of intelligent persons would understand and appreciate an explanation by their physicians of the advantages that would accrue to them from medical examinations at regular stated intervals.

I have never been able to see any good rea-

son why the discovery of defects in the children of families in which a physician attends the adult members should be left to the school examination, if there happens to be one. Is it not entirely within the right and province of the family physician to advise the parents of the desirability of a medical examination of their children, and the correction of their defects before permanent harm has resulted? And the same should apply to the adult members of families in which the children have been attended by physicians. It would seem not unreasonable that a way should be found to discover their dietary diseases, their hernias, their tuberculosis, and their mental maladjustments before they have progressed to the stage where lasting damage has been done and the patient himself or his relatives complain of them. Certainly the greatest opportunities of the future lie along preventive lines and if private physicians and not some other agency are to render this service, it would seem that they should take advantage of the abundant opportunities for legitimate compensable medical practice which have thus far been so generally overlooked.

It may be as well at this time as at any other to present to you my views regarding State Medicine. I know that there are physicians who believe that somewhere in the background there is a well-defined plan or policy on the part of those who provide the public health leadership in this country whereby every citizen may be furnished medical and surgical care and treatment by physicians who receive their entire pay from the Government—national, state, or local. According to this theory the line of strategy for the introduction of State Medicine is already fully developed and the way is being carefully paved for the inauguration of the new system as soon as a favorable opportunity is presented. If such a plan is in existence, I do not know about it, although I have been identified with public health work for the past twenty years and number among my most intimate friends and advisors many of those who have attained high eminence in the field of public health. If such a plan is in existence, I assure you most emphatically that it is not among those members of the medical profession who are devoting their lives to the advancement of public health. The United States Public Health Reports, which is the weekly publication of the United States Public Health Service, contains in the issue of August 28, 1931, a paper by one of its officers from which I quote the following paragraph:

> "To me State Medicine appears as a miserable makeshift. It is un-American, ultrapaternalistic, and destructive of self-respect in both doctor and patient. It is a failure in Germany, in England, and other European countries. It is, from an American viewpoint, a pauperizing influence, wrong in principle, and doomed to failure in practice if we should be foolish enough to try it. * * * Proper organization of county medical societies will make State Medicine impossible, enable the physician to retain his self-respect, and preserve that priceless, intimate, confidential relation that should exist between physician and patient."

What has been said in the preceding paragraphs should be sufficient to dispel any doubts as to the position of the public health authorities in Virginia and elsewhere in regard to State Medicine. I trust that no ammunition may be wasted in fighting those who are your allies. In my own opinion an invincible front will be presented if we are sufficiently intelligent to work out our problems between ourselves and develop a united program which will sufficiently cover the field.

It is scarcely worthwhile to present a paper of this character unless constructive suggestions can be offered as to how improvements may be brought about. The plan that appeals to me as offering the greatest promise of satisfactory results is that which is being developed in connection with the community hospital and district health department at Farmville. Through the organization of its out-patient department, this hospital, manned by qualified local physicians, is now conducting many of the activities which have elsewhere been carried on by public health departments. These comprise prenatal clinics, well-baby clinics, immunization clinics, laboratory service, and medical clinics which include diagnostic services for tuberculosis, cancer, and heart disease. These are activities which are needed in every community and it seems appropriate and desirable that they should be rendered through the hospital and the local physicians rather than through the health department. Every reputable physician in the community served by the hospital is eligible to become a member of its staff. When desired physicians may send their cases to the hospital for study and diagnosis and have them returned to them for treatment. In other cases, the recognition of the need for hospital care may be promptly

followed by admission of the case to the hospital.

Each of the counties served by the hospital contributes from its treasury funds to be used for services rendered to those of its citizens who are unable to pay the entire cost of their treatment. The ability of persons to pay in whole or in part is determined by a qualified social service worker.

The plan has been in operation only for a comparatively short time but its possibilities for future development are worthy of careful study and consideration by both the medical profession and public health authorities. If the Farmville project proves satisfactory, the extension of the plan will doubtless be considered. The maintenance and operation of the public health clinics will in all probability be recognized eventually as a public responsibility and it would seem only fair and reasonable that the local physicians who serve in such out-patient departments should be compensated for their services. Toward this end a State appropriation in the interest of public health would seem quite justifiable in communities which are unable to meet the entire responsibility.

During my brief connection with the State Department of Health one of the questions which has most frequently come to my attention is that concerning midwives. Briefly stated, my understanding is as follows:

In 1918 the Bureau of Vital Statistics had a list of over 9,000 midwives secured from local registrars and from birth certificates. This was perhaps the largest list of any state and perhaps of any country. Many were women who did not consider themselves professional midwives but who simply attended neighbors, frequently without pay. They were responsible to no one and were under no supervision whatsoever. Being impressed with the large number of puerperal deaths, particularly those from septic infection, the State registrar of Vital Statistics thought that it might be possible, by securing some sort of supervision over midwives, to give them instruction which would make them less dangerous even if no more proficient. It was also his hope that the local registrars might be brought more closely in touch with the midwives of their vicinities.

For these reasons the Legislature of 1918 was requested to place the midwives of the State under the supervision of the State Registrar of Vital Statistics. When this had been done he prepared a booklet, "Help for Midwives," which provided elementary instruction as to cleanliness and the proper method of handling cases. He also required the local registrars to issue them permits signed (in printing) by the State Registrar, and by the local registrar at the time of issuing. The law is worded so as to allow only midwives who have permits to collect feees. The safety rules for the midwife to follow are printed on the back of every permit.

It was never the expectation that the midwives would be greatly improved by the instruction which we endeavored to give them. The only hope was that they would be less dangerous to their patients. Toward this end it has been the rule of the office never to write a letter to a midwife, either a circular or a personal letter, without emphasizing rule Number 3 which forbids midwives to make inside examinations. The hope is to eliminate this source of septic infection. They are, however, taught the rules of cleanliness and asepsis as far as it is possible to teach women of their mentality. An effort is made on all occasions to impress upon midwives that in delayed cases or when any emergency arises they must send for a physician as promptly as possible. The colored women are largely attended by colored midwives who seem to be more docile and obedient than the white women. It seems reasonable to believe that it is largely through this means that the deaths from sepsis of colored women have been reduced by about twenty-five a year. At the same time the number of midwives has been reduced from 9,466 to 4,338 and the reduction is still continuing.

In October, 1922, the Department started work with the 6,000 midwives then in the State. They were untrained, and with few exceptions, ignorant and superstitious. Counties were grouped according to the number of midwives in them, and classes were started where there were 100 or more.

Letters were sent from the State Office calling midwives together at central points in each county in the Black Belt, once a month for eight months. Simple instruction was given in Prenatal Care, Preparation for Confinement, Course of Labor (given by a physician), Postnatal Care, and Care of the Baby. Special emphasis was laid on cleanliness; and also on the importance of having urinalysis done. They were shown how to prepare for a labor

case, how to sterilize the scissors and dressings for the cord, and many other important points. At the next meeting of the class the midwives were required to demonstrate what they had learned. The colored midwives were encouraged to bring mothers to these meetings, and mothers' classes for white women were held through the Parent-Teachers Association or some other organization.

As the courses were completed in one group of counties, others were taken until the classes have now been held in ninety-two of the 100 counties. With the large territory to be covered, it has seemed impossible for the Director to do more than call the midwives together once a year for a review. They have been eager to learn and many are now giving prenatal care when engaged in time, and are having urinalyses done. As a result of the work, the number of doctors' deliveries has increased and the number delivered by midwives has decreased. A higher type of woman is taking up the work. A more advanced course, known as the Doctors Helpers Institute, is given each summer at the University of Virginia, and at the Virginia State College for Negroes. All new midwives are expected to take this course.

The Rosenwald Foundation several years ago offered to pay one-fourth the salary of negro nurses, and the first one began work in a group of eight counties in September, 1929. The negroes in these counties raised the larger part of the remaining three-fourths of her salary; the State paid the rest.

The Rosenwald Nurse organizes Health Clubs attended by mothers and midwives. The instruction given in these Clubs is founded on the State Correspondence Course for Mothers, and demonstrations are given and required. In the counties supervised by the Rosenwald Nurse, the following rules have been put into effect:

Requirements for New Midwives

(a) Medical examination including Wassermann Test.

(b) Letters from two responsible citizens, one a local physician, testifying as to their good character.

(c) Ability to read.

(d) Completion of State Board of Health course for midwives.

(e) Attendance upon at least ten cases under a doctor's supervision.

(f) Equipment approved by State Board of Health.

It has been the aim and desire of the State Department of Health gradually to eliminate the midwives. Much of the effort is directed at decreasing their work and turning it to the physicians. It appears to be a fact, however, that in a large part of the rural sections of Virginia it is frequently difficult and sometimes impossible for women to secure the services of physicians and that, therefore, the work of a midwife or of some kindly disposed woman is a necessity.

I have been told that the need for midwives is still further emphasized by the fact that physicians have within the last few years increased their charges to a point that many poor women are unable to employ them on such occasions; also that not a few physicians endeavor to avoid this class of work and welcome the presence of midwives who relieve them of it. It is said that in other places, however, the fact that midwives are encroaching upon the practice of the local physicians arouses their resentment and opposition which, at times, takes the form of criticism of the system of registration. The Department does not defend the midwives on account of any supposed increased proficiency and does not advocate employment of them. It simply recognizes them as necessary under present conditions and endeavors to lessen as much as possible the likelihood of their doing harm.

It has been charged that the State Department of Health contents itself with issuing permits to midwives which they may use as evidence to those employing them that they are qualified to practice midwifery and then pays no more attention to the matter. From the foregoing it will be evident that the State actually does do more than merely issue permits. It is true, however, that the permit may be used to convince an ignorant person that the midwife has qualifications that she does not possess.

It has been charged that deaths occurring among persons attended by midwives are charged to physicians and not to midwives and that it is, therefore, made to appear that the maternal mortality is higher among women attended by physicians than among those attended by midwives. It is a fact that midwives endeavor to secure the services of physicians as soon as abnormalities of labor are evident and it is necessarily a fact that a mid-

wife assuming responsibility only for normal labor cases will have fewer deaths than a physician who secures only the abnormal cases among a certain number of deliveries. No tables are published by the Bureau of Vital Statistics showing maternal deaths in the practice of physicians as compared with those among women attended by midwives.

And this is the status of the midwives. There is doubtless much that can be done to improve it. It would seem that the number is still perhaps twice as large as is really necessary. This may well be studied in relation to distribution. It is possible that the present method of issuing permits may be revised so as to remove the features concerning which there is justifiable complaint. I have not yet had time to become sufficiently familiar with the problem to venture an opinion as to just what should be done to make it better. If you have practical constructive suggestions to offer, I assure you they will be most welcome. If you are willing to give me an opportunity to study the question, I pledge you the best efforts of the Department and myself in improving the situation and will hope that real progress may be reported at your next annual meeting.

In the preceding pages I have endeavored to touch upon a few of the problems which confront us as physicians and public health officials, and to indicate in a somewhat general way my attitude toward them. There are many other matters which I have discussed with you individually and which I wish time would permit for discussion collectively. Whether or not you have agreed with the thoughts which I have expressed I hope that I have left no doubt of my earnest desire to cooperate freely and fully in arriving at a wise and satisfactory solution of the difficult problems which face us, most of which are neither of your making nor of mine. This is the most important thing that I can hope to accomplish at this meeting. Old difficulties are bound to be promulgated into the future and new difficulties will arise but if we are able to feel that we can present our problems to each other with confidence, that they will be received and considered in a spirit of helpfulness and cooperation, we shall be successful in working out solutions which will be of great advantage not only to Virginia but will serve as an example that the rest of the country may do well to follow.

UTERINE FIBROMYOMATA—A REVIEW OF 1,145 CASES TREATED BY SURGERY OR RADIUM.*

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The object of this review has been undertaken by me for what benefit I might personally glean out of my individual experience with uterine fibromyomata. Added to this review has been the detailed study of all those cases treated at St. Vincent's Hospital by other men of the Staff over a ten year period, from 1920 to 1930 inclusive. The total series is 1,145 cases.

In the fall of 1918 I purchased some radium, and during the next twelve months cautiously felt my way with the use of radium in treating fibromyomata. This study, therefore, will cover a series of cases treated surgically by me for the ten years prior to 1920 without radium, and, for comparison therewith, an analysis of all cases of fibromyomata which I treated personally for the ten year period, 1920 to 1930, with surgery or radium. The surgically treated cases prior to 1920 number 128, whereas the cases treated with radium from 1920 to 1930 number 217. During the period from 1920 to 1930 when we were constantly using radium there occurred in my surgical work 284 cases of uterine fibromyomata that were treated surgically without radium, thus making a survey of 412 private cases treated surgically as compared with 217 cases of uterine fibromyomata treated with radium. Out of the 412 private cases treated by surgery alone there were 359 hysterectomies and fifty-three myomectomies.

In this connection, while considering surgery alone for dealing with uterine fibromyomata, it is most enlightening to discover that during the period of 1920 to 1930 in 217 cases treated by radium there were sixteen cases that had radical surgery following treatment with radium. Some of these cases coming to surgery following treatment with radium cannot be ascribed to improper selection of cases for radium for, whereas the tumors were sufficiently large to require surgery, yet the condition of the patient was such that surgery could not be undertaken and radium was employed as a hemostatic measure to check bleeding and permit a general improvement which later would justify the necessary surgery, as

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indicated by the size and other factors involved in the problem. Again, other cases having surgery following radium treatment came to operation not because radium would not probably have been sufficient in the problem, but because, after one radium treatment, the symptoms were not relieved and radium, being a new and untried agent in the eyes of the laity, tempted the patient to insist upon a "once and for all" cure by surgery, rather than to have a second or more treatments with radium and in the mean time remain in doubt as to the outcome. The remaining cases coming to surgery after radium were undoubtedly the result of improper selection of cases for radium treatment, since these operative cases all occurred during the first two or three years of our radium work when we were building up experience and ability to select cases properly for radium.

Out of a study of the total 629 series of my own cases treated by both surgery and radium, I am fairly well convinced that properly executed surgery is just as efficient in relieving the patient as the treatment of these problems by radium, but we have always to consider other factors than merely the relief of symptoms by operation or radium, and this immediately brings up the question of mortality and morbidity after surgery and after radium. In the 412 major operations personally done by me without previous radium treatment, there were eight deaths, or a mortality of 1.9 per cent, whereas in the total series of my cases treated by radium or subsequently by operation after radium there was no mortality. Subtracting all of our personally treated cases from the total 1,145 cases treated in St. Vincent's hospital from 1920 to 1930, there were left 516 cases handled by some forty other men operating in St. Vincent's hospital. Of this number there were sixty-four cases treated by my confreres with radium. This leaves 452 cases handled surgically by approximately forty different surgeons, in which there were fourteen deaths or a mortality rate of 3.09 per cent. There was no mortality in the cases treated by my colleagues with radium. Keene and Kimbrough, in a series of 202 cases treated surgically, reported a mortality rate of 2.15 per cent, while in fifty-two cases treated by radium they reported no mortality, and a satisfactory result in 93.7 per cent. Linton, Marks and Smith reported a series of 250 cases treated by radium in which 93.3 per cent were cured, with a recurrence of symptoms in 6.7 per cent.

It is readily noted from my series of operative cases that the per cent of myomectomies was comparatively low, and from a study of the entire series I am practically convinced that, except in some very selected cases, hysterectomy, though radical, is, in the final analysis, the best measure for the individual problem. My reason for this attitude is that myomectomy may be limited to one, two or three isolated tumors and does not effect the tendency which is usually present for a general fibromyopathy so commonly found in these uteri. Again, bleeding, which is usually the principal symptom associated with these tumors, is frequently not relieved by myomectomy and this often demands additional treatment either by surgery or radium. Finally, a study of my cases and the report of some other clinics would indicate that the mortality rate and post-operative complications are greater after myomectomy than after hysterectomy. It is pertinent in discussing myomectomy to touch upon the problem of pregnancy after myomectomy, for this is the principal reason or excuse for the operation. There is no question but that, in the study of my own cases as well as those reported by Tracy, Masson and other clinics, pregnancy occurs more frequently after myomectomy than after radium. However, as Linton remarks, the case against radium with regards to pregnancy is not a one-sided or closed controversy for, when we consider the rather universal good effect of radium as against the fact that without radium there would arise the necessity for major operation often to be undertaken on patients who are in a serious condition, then the common sense judgment of the surgeon must come to the front.

In our own series of young women below the age of thirty-eight treated by radium there have occurred six pregnancies in which three aborted and three gave birth to normal living babies. In 209 cases Linton, Marks and Smith report that, after considering the age of the patient, the marital condition, the history of repeated abortions, the history of previous fertility and sterility and a careful survey of the general health, it was considered that thirty of the 209 cases were potential child bearers at the time of radium treatment.

Of these, thirteen had twenty pregnancies, of which twelve were lost by abortion, premature birth or death at the time of birth, whereas eight had normal living babies from one to eleven years of age at the time of their report. Dr. Crile gave quite a jolt to the radium enthusiasts in 1924 when he said that radium and X-ray should not be used during the child-bearing age except for cancer of the cervix, his argument being that surgery can be made to relieve any pathological condition in the pelvis and still preserve ovarian function. The literature is full of contradictions to this teaching for many radiologists have proven the preservation of the conceptive powers of adnexa exposed to radiation.

Indications for Surgery

1. All large tumors filling up the lower abdomen with the subserous type predominating, as these are unfavorable for radium treatment because radiation varies as the square of the distance, and, further, in most of these very large multiple tumors there is a predomination of fibrous tissue, and where this is present radium offers very little in the way of favorable retrogression.

2. All tumors complicated by malignancy of the fundus or cervix.

3. All tumors of such type as to interfere with the function of the bladder and rectum.

4. All tumors associated with pain.

5. All tumors associated with inflammatory lesions in the fallopian tubes, acute or chronic.

6. All tumors associated with cysts of the ovaries.

7. All pedunculated tumors, whether subserous or submucous.

8. All degenerating tumors, such as necrosis, calcification, red degeneration or gangrene after torsion of the pedicle.

9. In the absence of other causes, all tumors having scanty bleeding yet showing a low hemoglobin, thus indicating degeneration, are unfit for radium therapy and, therefore, fall under the indications for transfusions and surgery.

Many authorities indicate that surgery should always be undertaken with the presence of fibroid tumors in women during the child-bearing age when children are desired, but I have purposely left this out of my indications, for this is always a problem that must be covered by the dictates of sound surgical judgment and in my opinion cannot be considered as a rule to be invariably followed.

Indications for Radium

In the selection of cases for radium the contra-indications for radium must be constantly kept in mind, and these contra-indications are well covered in the above list of indications for surgery. With these indications for surgery ruled out by a careful evaluation of the problem, we may then summarize the indications for radium as follows:

1. Benign uterine hemorrhage, either menorrhagia or metrorrhagia of obscure or indeterminate origin.

2. Fibromyopathic enlargement of the uterus, producing symptoms.

3. Polypoid endometritis due to circulatory disturbances from overgrowth of fibrous and muscular structures in the uterus. In young women under thirty-eight, radium should only be used after one or two curettages have failed, whereas, in women beyond thirty-eight, diagnostic curettage and a full radium treatment is appropriate.

4. All tumors seven inches in diameter or less.

5. As a temporary hemostatic measure in large fibroids without infection when surgery is indicated but not advisable on account of the extremely poor condition of the patient due to associated disease, marked anemia, obesity and circulatory disturbances.

6. For continued bleeding after myomectomy.

7. For all benign bleeding cases at the menopause or older.

8. As a second choice method for young or old refusing operation.

The question of age incidence of suitable cases for radium treatment in the 217 cases I personally treated shows in this survey that there were only sixteen women under the age of thirty, and, in these sixteen cases, four, or 25 per cent, required two or more additional treatments. The dosage given in this group never exceeded 300 mg. hours except in two instances where 600 mg. hours was used at the third treatment. Between the ages of thirty and forty there occurred sixty-one cases, and only five of these, or 8.19 per cent, required additional treatment. The average initial dosage in this group was 600 mg. hours, and the five who had a second treatment were all given

1,200 mg. hours. The number of cases ranging from forty to sixty-seven years of age was 140, and six of these, or 4.28 per cent, required additional dosage. In the whole of the 217 cases this survey shows there were only fifteen of the entire group that required more than one treatment. Dr. Jeff Miller says 95 per cent of all fibroid cases properly handled by radium do not need repeated dosage. Our proportion of cases requiring repeated doses of radium is a little higher than Dr. Miller's experience.

In the total of 217 cases treated by radium there occurred only three cases of carcinoma, representing 1.4 per cent. The diagnosis of these cases was confirmed by exploratory operation, and radium was merely a palliative measure. It is interesting to note that the percentage of secondary radium dosage is highest in the youngest group and lowest in the oldest group of cases. This is due, in my opinion, to the caution exercised relative to dosage in the young woman and the boldness with which full doses were given in all cases above forty years of age.

Aside from gross technical errors in the application of radium, the greatest danger attendant upon the use of radium for the treatment of fibromyomata lies in the pitfall of associated adnexal disease. In this review, 516 consecutive operative charts were reviewed to determine the incidence of associated adnexal disease. One hundred and sixty-four cases, representing 31.7 per cent showed the presence of associated tubo-ovarian pathology with the fibromyomata. Wood states, in review of a series from St. Luke's Hospital, that associated inflammatory disease occurred in 28 per cent of his cases. Neill, in a similar review, puts the incidence at 25 per cent. The high prevalence of fibroids among negro women of the South probably accounts for the higher percentage of associated inflammatory disease in my series. It is extremely dangerous to treat fibroids associated with adnexal disease by radium, for exacerbation of the inflammatory process is very common. It is often difficult in a case of multiple fibroids to determine the presence of associated adnexal pathology; therefore, the importance of a most careful history before radium is used. Bonnet and others have reported serious peritonitis following this mistake. We did not have any such complication in our 217 radium cases, due undoubtedly to the fact that Dr. Howard Kelly called attention to this danger at the time we first began the use of radium. Undoubtedly we were lucky, never-the-less this is a pitfall of radium therapy that could readily catch the most careful diagnostician.

Results of Radium Treatment

In the 217 radium cases there followed, after radium treatment on sixteen patients, the operation of hysterectomy. In reviewing these cases, for reasons noted above, I cannot conclude, after the most critical consideration of the problem, that more than eight of them should be considered as radium failures, and this would indicate that the satisfactory results after radium in my series was at least 96 per cent. I believe most radiologists think that the effect of radium on the uterus is secondary to its action on the ovaries, but we must always remember that ovarian hyperactivity is often the cause of fibromyopathic hyperplasia. Undoubtedly the radium affects both the ovary and the tumor, for big tumors rarely diminish in size without complete cessation of menstruation, whereas, in many of the smaller fibromyomata, the symptoms of bleeding and tumor have been controlled by small repeated doses without seriously disturbing the ovarian function. Fifteen of the 217 cases had two or more treatments with radium, thus leaving 202 cases whose symptoms were relieved completely by one radium treatment. This is a highly favorable response, and is partly due to our good fortune in the selection of the cases together with the estimation of the proper dosage. In line with this thought, I am prompted to repeat that, out of a total of 629 cases of fibromyomata in my private series, 412 were selected for surgery and 217 for radium, a ratio of about two to one in favor of surgery.

Bibliography

Bonnet, L.: Generalized Peritonitis Following Radium Irradication of Uterine Fibroma. *Bull. et. mem. Soc. de Chir. de Par.*, 1930, xxii, 142 Abs.: *J. A. M. A.*, Chicago, 1930, xciv, 2028.

Freidman, L. J.: Radiation Therapy for Benign Uterine Hemorrhage. *Am. J. Surg.*, N. Y., 1930, viii, 1241-1242.

James, W. D. and James, A. W.: Deep Roentgen Ray, Radium, Myomectomy, and Hysterectomy; Relative Value in Uterine Fibromyomas. *J. A. M. A.*, Chicago, 1928, xc, 201-202.

Landham, J. W.: Radiotherapy in the Treatment of Uterine Fibromyomas. *J. Florida M. Assn.*, 1930, xvii, 171-174.

Linton, J. R., Marks, G. A., and Smith, C. V. S.: The Treatment of Non-Malignant Uterine Bleeding by Radium. *J. A. M. A.*, Chicago, 1929, xcii, 966-968.
Lynch, F. W.: Uterine Fibromyoma; Review of Six Hundred and Eighty-three Cases. *J. A. M. A.*, Chicago, 1930, xclv, 156-162.
Masson, J. C.: Myomectomy, Hysterectomy and Radiotherapy in Fibromyomas of Uterus. *J. A. M. A.*, Chicago, 1926, lxxxvii, 1530-1533.
Miller, C. J.: Radium as a Temporary Measure in a Large Uterine Fibroid. Reprint.
Neill, W., Jr: A Review of the Treatment of Uterine Fibroids, with Special Reference to the Use of Radium. *Am. J. Roentgenol.*, N. Y., 1929, xxi, 332-336.
Polak, J. O.: Fifteen Years With Radium in the Treatment of Fibroids, Non-Malignant Bleeding and Dysmenorrhea. *Am. J. Surg.*, N. Y., 1929, vi, 648-654.
Sheridan, W. M.: Value of X-Rays and Radium in Treatment of Menorrhagia and Fibroids. *J. S. Car. M. Assn.*, Greenville, 1925, xxi, 290-292.
Thomas, M A.: X-Ray and Radium in the Treatment of Uterine Fibromyoma and Benign Menorrhagia. *Ohio State M. J.*, 1930, July.

CANCER OF THE STOMACH.*

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Aside from the specific causes of malignant disease, the immediate problem in carcinoma of the stomach is most involved in the diagnosis of the disease from the earliest symptoms and the treatment of possible benign lesions which may become malignant. There are, however, certain points in the etiology and pathology that have such a direct bearing on these more important phases that it is necessary to discuss them briefly. Leaving out these general causes of cancer which we must admit are now almost entirely unknown, the only specific lesions which may develop into malignant disease are benign tumors and benign ulcers. The benign tumors are so rare and when diagnosed the treatment is so well established that we can dismiss them. The benign ulcer, however, is not particularly rare and the treatment is so much a matter of debate, that it is important to discuss it as a possible precancerous lesion. McCarty of the Mayo Clinic believes that 70 per cent of cancers of the stomach arise on benign ulcers This perhaps is an extreme view, but so also are those opinions that no cancer of the stomach arises from a benign ulcer. It seems quite conservative to agree with Moynihan that about 25 per cent of all cases of cancer of the stomach arise on benign ulcers. It is certainly generally agreed that irritating lesions on epithelial surfaces, particularly ulcerative lesions, result not infrequently in cancer. It seems logical to suppose the same is true for the stomach when we so readily admit it for the lip, tongue, cervix uteri, and leg.

The location and character of the growth influence very greatly the symptoms and diagnosis as well as treatment. Margaret Warwick has published a very complete study of a series of late cases coming to autopsy. She found the location as follows:

Pylorus	42 per cent
Wall	37 per cent
Cardia	11 per cent
Diffuse	10 per cent

About half of the growths were of the ulcerative type, the other half papillomatous. cauliflower-like, or diffuse. McCarty says that an ulcer more than 2.5 cm. in diameter is malignant, and I think this would be pretty generally accepted, but an ulcer much smaller may be malignant. From the primary growth, of course, the disease spreads first to the regional lymph nodes and liver, and later to the peritoneum, omentum, and lungs.

The outlook for a patient with carcinoma of the stomach today is very bad. I have recently studied a series of cases at the McGuire Clinic, and as our experience is in line with larger series, I will quote from it. The cases were about evenly divided into four groups; the first, those which were obviously inoperable and not explored: the second, those which were explored but such extensive metastases found that no operative relief was possible; the third, those whose growth was irremovable but gastroenterostomy was done for relief of obstruction; and the fourth, those that were resectable and a surgical cure attempted. To have to admit that three out of four cases are hopeless is a challenge to us to improve the situation. This is not easy, because the stomach can stand a lot of punishment before it complains, and 20 per cent of the growths are located in the cardia or are diffuse and therefore give symptoms particularly late. In order to improve this situation, the old picture of carcinoma of the stomach presenting the anaemic, emaciated, vomiting patient with a mass in the epigastrium must be forgotten and in its place the thought of carcinoma must come with relatively minor complaints. In our cases 10 per cent gave a history of long continued

*Read before the Richmond Academy of Medicine, November 10, 1931.

trouble (two years or more). The others averaged only eight months from the first symptom. Prompt action is therefore necessary; we cannot long watch the progress with safety. The proportion of male to female was two to one; the average age was fifty-six years. All of them had lost weight (ten to seventy pounds); most of them were anaemic (hemoglobin 30 to 95 per cent, average 65 per cent); two out of three had nausea or vomiting; one in three had blood in stool or vomitus; one in three had free hydrochloric acid present in the stomach usually low but occasionally within the normal limits; half of them had palpable masses; and half of them had metastases. Some of these people had neglected themselves, others had been treated for months by their physicians without consultation, some had puzzled eminent diagnosticians, and some had even been missed by competent X-ray men.

A very important fact brought out in this series is that nine out of ten of them give a relatively short history, they are not chronic complainers but are people who are accustomed to good health, and therefore their visit to the physician should be taken seriously. We must be impressed by the first symptoms that these people have and on that basis suspect carcinoma of the stomach and have them examined by the roentgenologist.

The first symptom in 51 per cent of our cases was epigastric pain. This pain was very variable in character, frequently it was a dull gnawing sensation, in others it was described as sharp, or aching, or burning.

In 41 per cent the first symptom was indigestion and this was described as loss of appetite, or gas after eating, or waterbrash, or sour stomach.

In 8 per cent the complaint was weakness without reference to the stomach.

It is only by prompt action on the part of the physician in the face of such vague symptoms, particularly when presented by elderly patients who previously had been well, that an early diagnosis will be made. The positive diagnosis, of course, can best be made by X-ray examination of the stomach. The diagnosis is usually quite evident, but it may be difficult at times to defferentiate cancer from a benign tumor, benign ulcer, or syphilis of the stomach. Both benign tumors and syphilis of the stomach are very rare. The former should be explored surgically so the problem is not important. The latter is more difficult. The positive Wassermann reaction is suggestive and the Roentgen picture slightly different, but at times the problem is hard to decide. The test of antileutic treatment should be tried in doubtful cases, but if the disease is malignant we are losing valuable time. I believe, therefore, that after a few weeks of treatment and a failure to obtain marked improvement, the patient should be operated upon. Even though the mass is luetic and is resected, no great harm has been done, because about half of these people develop stenosis of the pylorus which requires surgical relief.

The treatment of cancer of the stomach is surgical removal of the growth with reconstruction of the stomach; the technical details of this have no place in this discussion. We are often able to relieve the obstruction by a gastroenterostomy and add to the life and comfort of the unfortunate patient when it is impossible to remove the growth. Not infrequently a large part of the mass and the enlarged lymph nodes are due to secondary inflammation, and this should be remembered by the surgeon in deciding the operability of the lesion.

So much for the late cases. If we get them earlier the differentiation of benign and malignant lesion is more of a problem. Many internists believe that all ulcers of the stomach should be treated medically. I am willing to agree with them in this so far as all ulcers of smaller size than 2.5 cm. in diameter are concerned; larger than that the disease is malignant and should be resected promptly. I agree to this, however, with the provision that the ulcer be watched very closely and checked by repeated X-ray examination, and if it grows larger or shows no indication of healing in three or four weeks, it should be referred to the surgeon for exploration.

The decision for and against operation on benign ulcers of the stomach should be influenced by the mortality rate. The cases resected in our series had an operative mortality of 13 per cent, but they were late cases of cancer usually in patients greatly debilitated. For benign lesions and early carcinoma the mortality should not be more than 2 to 3 per cent. Against this mortality rate for benign lesions we have the possibility of the lesion being or becoming malignant, the possibility of the ulcer perforating, and the probability of a cure after failure of medical treatment.

SUMMARY

It is my belief that about 25 per cent of gastric carcinomata arise on preexisting benign ulcers.

The usual first symptoms of cancer of the stomach are epigastric pain, vague indigestion, and weakness occurring in elderly people accustomed to good health.

The diagnosis of cancer of the stomach in the early stages must be made by X-ray examination and patients should be referred for X-ray on suspicion by the clinician.

Benign ulcers of the stomach when treated medically should be observed closely and if no improvement is obtained in three or four weeks, they should be referred to the surgeon for operation.

The surgical mortality rate for benign and early malignant lesions (2 to 3 per cent) is lower than the medical mortality rate from cancer present or later developing and from perforation of ulcers.

1000 *West Grace Street.*

THE RELATION OF INFECTION IN EARLY LIFE TO SUBSEQUENT MENTAL DISORDER.*

BUCKNER M. RANDOLPH, M. D., Charlottesville, Va.

It may seem presumptuous for an ordinary physician to venture into the discussion of mental disease. Not a few of us have watched the development of the behavioristic school with serious doubts as to its soundness. My present purpose, however, is not to engage in controversy, but rather to maintain that there may be factors in the etiology of inadequate personality other than sexual impulses and repressed infantile impressions. I quote one sentence, purely for the purpose of illustrating the type of teaching referred to above:

"In stammering, as in all narcisistic neuroses, a vulnerable point must be found in the narcisistic shell of the personality, and this vulnerable point in stammerers is the oral libido." (Coriat, *Jour. A. M. A.*, 1931, No. 25, p. 2149).

Here is an assertion made as positively as though it were a statement of a demonstrated scientific fact. In reality, it is a statement of an opinion, based on hypothesis. However valuable hypotheses may be, they are not demonstrated facts. This truth should always be borne in mind. Even the atomic theory of matter, on which the chemical progress of more than a hundred years has been based, is no longer accepted in principle by the scientific world. The Ehrlich side chain theory of immunity has been an instrument of great advances in the prevention and treatment of infectious diseases, but there are today few thoughtful biologists who consider it a final statement of the principles involved in the mechanism of immunity. In like manner, whatever merit the current theories as to the etiology of mental disease may possess, actual knowledge thereof is incomplete, and the subject is still one for further inquiry.

It seems appropriate at this point to refresh our memories on certain ancient conceptions of the genesis of mental and other diseases.

The humoral theory of disease comes down to us from the time of Hippocrates, and obtained credit till comparatively recent times. According to this theory, the human body contained four basic fluids, or humors: blood, generated by the heart; phlegm (or mucus), secreted by the brain; yellow bile by the liver; and black bile, by the spleen. Disease was believed to arise from disorder in the quantity, quality, or distribution of one or more of these humors. Furthermore, a particular person was believed to have a constitutional predominance of a particular humor, which determined his temperament, and indicated the types of disease to which he was especially liable. The names of these temperaments are preserved in the current language of the present time. We have the adjectives, *sanguine*, (*sanguis*, blood, Lat.); *phlegmatic*, (phlegma, mucus. Gr.); *choleric*, (chole, bile, Gr.); *melancholic*, (melan, black, and *chole*, bile, Gr.). In addition, they recognized the sexual factor in a group of psychic disturbances by giving it the name *hysteria*, (hysteron, womb, Gr.).

The ancient students of medicine thus recognized a fact that merits more consideration than it receives today, namely, that the symptoms of mental disorders are only modifications or perversions of phenomena that are common to all humanity. We all have periods of elation and depression; of misjudging the motives and conduct of others; of transient impulse to violent conduct under provocation. It takes but a small amount of the ethyl radicle to produce in normal individuals mania, or stupor, or both. The illusion of the desert mirage occurs to any one, the conditions being favor-

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able. The difference between such manifestations in the sane and the insane is not in kind, but in degree. In the former they are slight, transient, and controllable; in the latter they are prominent, permanent, progressive, and uncontrollable. In the former they disappear with the cessation of recognized causative factors; in the later, the causative factors being unknown, or irremediable, the phenomena persist. The situation is analogous to what we observe with kidneys:—in an acute infection, like pneumonia, we find diminished function, with albumen and casts, which disappear, as the pneumonia subsides; while in Bright's disease the same findings are permanent, progressive, fatal.

The humoral theory was the earliest effort to escape from the primitive behavioristic concept that the insane person was possessed of an evil spirit, or was bewitched, or was a victim of the anger of the gods. It is not impossible that a humoral concept, brought up to date, may again get a serious hearing in scientific discussion. Chemical pathology is, as yet, in the embryo stage. The future aim of science must be to interpret the phenomena of life, both normal and abnormal, in terms of the physico-chemical reactions that are associated with them. At the 1931 session of the Section on Nervous and Mental Diseases of the American Medical Association, we find the chairman's address bearing the title, "Physico-chemical Factors in Mental Disorders," (Freeman, W. F., *Jour. A. M. A.*, Aug. 1, 1931), which shows that psycho-chemistry is already born.

As medical science has progressed along other lines, a number of pathological states, formerly regarded as lying exclusively within the psychiatric domain, have been rescued from such a classification, and placed under a materialistic pathology. Paretic dementia has become a variety of neuro-syphilis. A large group of morons and character defectives have proved to be cases of congenital syphilis. Cretinism is now thyroid deficiency. The dementia of pellagra is a food deficiency. Epilepsy is regarded as the result of metabolic imbalance, while a variety of psychic syndromes are recognized as arising from arterio-sclerosis.

In the light of such readjustments in the pathological concepts of a single generation, it does not seem unreasonable to look forward to still further enlargement of the group arising from materialistic pathological factors, both those already known, and those yet to be discovered. The purport of this communication is to ask consideration for a hypothesis which is suggested by clinical observation, and is, at the same time, supported by the analogy of data already established. This hypothesis may be stated as follows:

1. We expect that a given human brain will, between birth and adolescence, develop normally, and achieve successfully a normal adaptation to the environment, provided that the conditions for such evolution be healthy and normal.

2. It is to be expected that an unhealthy environment of brain cells during this evolutional period would interfere with such normal development.

3. Reasoning by analogy, from effects demonstrable elsewhere in the body, we venture to assume that the long continued presence in the body of the toxins of infectious disease would constitute an interfering factor in the normal development of brain cells, and hence, to the normal evolution of the function of adaptation to environment. The congenital syphilitic mental defective is a case in point.

4. The toxins of tuberculosis and of chronic streptococcic infection are entitled to more consideration as possible factors in the production of inferior and perverted personality than has hitherto been given them.

As to tuberculosis, we know by the tuberculin test that a large percentage of the population of older urban communities becomes infected by the tubercle bacillus between the ages of one and seven years. We know that only a relatively small proportion of such infected children ever presents the picture of clinical tuberculosis. Those that escape do so through the acquisition of specific immunity. We know that immunity to tuberculous infection is acquired in the human being only through the experience of actual tuberculous disease. That is, all children who are tuberculin positive, and who have developed specific immunity, have, at some time, been the subjects of active tuberculous disease. In many children the disease is so slight, and of such short duration, that no serious deviation from normal health is noted. In others it is more severe, more prolonged, and often recurrent. Such children are not recognized as having tuberculosis, but they are

below the normal level of robust health, and are spoken of as being delicate.

During such active disease as that described, toxic material produced by the tuberculous focus is circulating in the body fluids. We know that such toxins are injurious to cells. It is not to be expected that brain tissue, which, in the growing child, is engaged in the development of memory, intellect, judgment, and inhibition, should escape the noxious effects of these toxins, nor that the healthy development of brain function should be unaffected thereby.

Corroborative clinical evidence pointing to the association of mental disorder with tuberculosis is not wanting. There has been found at autopsies on cases of dementia praecox a percentage of active tuberculous lesions that strongly suggests more than a merely coincident relationship. Also, the age susceptibility of the two diseases coincides. I have seen a case combining active pulmonary tuberculosis (sputum positive), with a clear cut picture of dementia praecox. The pulmonary lesion became quiescent, and the patient made a temporary mental adjustment by becoming a religious fanatic. During the war I saw an adherent of a fanatical religious sect, who developed the picture of a katatonic dementia praecox. He died rather abruptly shortly after admission to the hospital. Autopsy disclosed a very extensive cerebral tuberculosis A case similar to this is reported in the French literature.

An army officer, who, during the late war, was invalided home as a psychopathic case, was found to have the clinical picture of upper lobe focal pulmonary tuberculosis. With rest, the activity of this lesion subsided. His family assumed responsibility for his care, and, against our advice, he was discharged from the service. Shortly after his discharge, he killed himself.

It is not uncommon for persons who have exhibited throughout life capricious and incorrigible character, especially manifesting itself in periodic resort to excessive alcoholic indulgence, to have their lives terminate with pulmonary tuberculosis.

The early stage of manic depressive psychosis so closely resembles the depression often associated with chronic indigestion, that the ancients unhesitatingly attributed its occurrence to the predominance of black bile (melancholia). Whether chronic infection has anything to do with these cases is doubtful. They appear to belong rather to the group of metabolic intoxications, along with epilepsy and migraine. It is not impossible, however, that chronic infection may have something to do with causing the metabolic disorder of these conditions. I have seen two cases of characteristic long standing migraine completely disappear following appendectomy, which was performed, in each case, for an acute exacerbation of a chronic appendicitis.

When we come to the role of chronic focal (streptococcic) infection as a potential factor in the production of defective adaptation of personality to environment, we find an abundance of clinical evidence pointing thereto It is seen especially in that group classed as the constitutionally inferior. Whether the inferiority is physical or mental (and it is often both), the stigmata presented are conspicuous, and remarkably uniform.

During the late war the military draft brought under medical observation a complete cross section of the male population of a certain age pereiod. Before the draft recruits to the army had been volunteers. The man who volunteers to fight usually can fight, so that the problem of the constitutionally inferior candidate had not, as yet, presented itself.

The criteria of physical fitness adopted for the guidance of the medical draft boards seemed to have been designed rather to obtain a survey of the health of the population, than to procure fit material for the army. The result was that the ranks were cluttered with a mass of young men, who were totally unfit for active military service. Such recruits sooner or later came back on the base or general hospitals, and were either discharged, or terminated their military careers in development battalions.

The picture most frequently presented by such recruits was that of a man who, while he showed no evidence of actual disease, would have been recognized by any old army sergeant as a hopeless prospect for a soldier. He was tall, shambling, flat chested, sway backed, pot bellied, knock kneed, flat flooted. His hands were clammy, his eyes astigmatic, his palate arch high and narrow, his teeth crowded, misshapen and irregular. Usually his tonsils and adenoids had been removed. If not, the tonsils showed the presence of chronic infection. Inguinal rings were large, and sometimes there

was incipient hernia. Joints were prominent, and skeletal muscle deficient.

Under the physical stress and close herding of military life, his realization of his inferiority became overpowering, and he cracked. If he could cook up the appearance of some malady, it was assigned as the cause of his admission to the hospital. Otherwise, he was sent up for psychopathic observation. Most of the malingerers belonged to this group.

These men are not primarily mental defectives. Many of them are precociously brilliant, and capable of high grades of achievement along certain lines. Physically they are suited for an indoor desk job, or for membership in an orchestra. In a more strenuous social and occupational environment, realization of their inferiority makes them introverts, and their defense reaction takes the form of a compensatory exaggeration of their own personality that I have named *egomegaly*.

Cases exhibiting to a greater or less degree the defects described above are very numerous. Under wise guidance and discipline they can usually make satisfactory adjustment to a properly adapted environment. If the egomegalic complex is allowed to continue uncontrolled, they become progressively more and more introverted, and may ultimately develop permanent psychoses.

Summary

The attempt to explain the occurrence of failure to adapt to environment on the basis of disturbing experiences during early life does not give proper weight to the fact that the majority of children develop normal personalities, although they are subjected to identical, or even worse experiences during infancy and early childhood, than are those who are unsuccessful.

It seems necessary to postulate some other factor, or factors, to explain why constitutionally inferior personality is not the rule, rather than the exception.

It is suggested that the exposure of the developing brain tissue to the toxins of tuberculous and streptococcic infection in early life may be such a factor in preventing the evolution of normal personality.

Discussion

Dr. Manfred Call, Richmond: To add to the interest of this discussion, I submitted Dr. Randolph's paper to a psychiatrist for comment.

"The example from Coriat is unfortunate. Not only does he lay himself open to the same charge he brings against the psychiatrists, but one might question the fairness of judging a school or group by an isolated sentence of one of its members. . . . While encephalitis is not mentioned in the paper, this could be played up strongly.

"One might expect from the title 'The Relation of Infection in Early Life to Subsequent Mental Disorder,' that at least one of the several case histories would have some bearing on the subject. No psychiatrist disputes the effects of the presence of syphilis or the absence of thyroid. Repeatedly the author appears to forget that the psychiatrist is first of all a physician and deems it necessary to make a thorough physical examination, before proceeding to the mental aspects of the case. . . .

"This paper should be a valuable contribution because it is stimulating and thought provoking."

My own comment will touch *first* on two minor items. Like the Doctor, I have been frequently confused and as often exasperated by the occurrence in medical literature of an unfamiliar vocabulary, and mathematical terms and symbols with which I was, and am still ignorant. Reflection, however, has convinced me of the necessity for the development of a descriptive language in the evolution of a science, even though translatable only by the elect.

Second, while hypotheses are not demonstrated facts, they furnish a basis for research investigation. If the atomic theory of matter and the Ehrlich side chain theory of immunity have led, on the one hand, to "The chemical progress of more than a hundred years," and on the other hand, to "the great advances in the prevention and treatment of infectious diseases," such results have certainly justified the promulgation of these theories or hypotheses.

Speaking more specifically on the main emphasis in Dr. Randolph's paper as expressed in the title, and in the four divisions of his hypotheses: Dr. Randolph places the span for normal brain development between birth and adolescence. Gesel (whom I will frequently quote), dates the commencement of the life cycle as coincident with fertilization and has found evidence of organic behavior as early as the first month (embryonal), a considerable complement of behavior capacities has matured by the middle of the foetal period, and so advanced are those capacities that an infant may be born two or three months before the appointed time and survive. This brings into consideration intra- as well as extra-uterine growth and function. Function is defined as a dynamic series of bio-chemical and metabolic events. The factor of growth potency he attributes to the inherent protoplasmic plasticity of the individual, subject to variations in his endocrine condition, state of nutrition, and body type and build.

The comment on item 1 is equally pertinent to item 2, dealing with an unhealthy environment of brain cells during this evolutionary period, and would include intra- as well as extra-uterine factors.

The effect of the long continued presence of the toxins of infectious diseases, non-lethal, can be expected to have an untoward influence on the protoplasm of the developing, or even adult brain cell and its functional activity certainly during the existence of the toxemia, but its specific action would be largely determined by the virulence and nature of the toxic factor, as well as the duration of the toxemia, and in addition, by the selective localization of the infecting organism in the central nervous system, and whether or not nuclear impairment of the cell resulted.

Endocrine imbalance could also result from such toxemia and play an important role, directly affecting the child if its own endocrine were involved, or indirectly, through the mother, should her endocrines be involved (foetal).

It is conceivable that the toxins of tuberculous and streptococcic infections may be possible factors as indicated in item 4, without the interposition of an encephalitis, but I must believe that such effect is exceptional, and a contributing factor would result from concomitant degenerative changes in the various parenchymatous organs of the body as a whole.

Finally, it must be borne in mind that the central nervous system is remarkably resistant to the effects of general body states. "It tends to progress in obedience to the inborn determiners, whether saddled with handicap or favored with opportunity."

"Its primary function is to receive stimuli arising from changes in the environment or within the organism and to transmit them to effectors which bring about the adjustments necessary for life." (Ranson).

Dr. Randolph, closing the discussion: I must say a word in regard to a criticism made by Dr. Call. The example quoted by me to illustrate a certain element existing in modern psychiatry does not mean that it describes all psychiatry. The quality of the symposium on Mental Hygiene that we heard this morning would refute such a claim. But I have been in contact with psychiatrists of the present day school for twenty-five years. I was long a member of the Society for Nervous and Mental Diseases, of the District of Columbia, and I know what I am talking about, when I say that just the sort of thing illustrated in that quotation has surrounded us all the time, and makes us question whether unlimited resort to theory and hypothesis is not a disadvantage to the healthy progress of such thought as we heard this morning.

I should like very much to know how one recognizes in the foetus of a month the determining qualities of personality.

ADVANTAGES OF THE PLASTER TRACTION SPLINT.*

J. B. DALTON, M. D., Richmond, Va.

About 16 years ago, Dr. Michael Hoke, of Atlanta, devised an apparatus for the purpose of producing traction, which I believe is more effective than any method heretofore made use of. He calls this the *plaster traction splint.*

I understand that until recently the use of this form of traction has remain unpublished. In the October, 1930, issue of the *Journal of Bone and Joint Surgery*, Dr. Lawson Thornton, of the Hoke Clinic, wrote in regard to its use in treatment of fractures of the humerus.

My own knowledge of this splint dates back about three years, at which time I was visiting the Hoke Clinic. I was impressed with its mechanical principles, its simplicity and its practical use, as clinically demonstrated. This form of traction may be made use of when traction is indicated in either the humerus, the femur, or the bones of the leg.

My first step in installing this apparatus is to make my point of traction. Adhesive strips, or mole skin carefully applied, may be sufficient in some instances. I prefer skeletal traction, making use of the Steinmann pin. I have used traction tongs, which I consider cumbersome.

Fig. 1.—Represents traction-plaster splint installed as in case of treatment of fracture of shaft of femur.

In applying skeletal traction, some form of anesthesia is necessary, and a strict aseptic technique must be observed.

In dealing with the femur, the point of traction is made just above the knee, the leg bones through or resting on the superior surface of the os calcis, and the humerus through the olecranon. If adhesive or mole skin is used, it should reach as high as site of fracture.

In continuation of the technique, let us first consider its application to the lower extremity. All skin surface which is to be encased in plaster should be covered with stockinette over which sufficient sheet wadding is placed for protection. The plaster is now applied in the form of a double hip spica, extending from well above the costal margin to the toes on

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the uninjured extremity and to the site of injury on the affected side.

The splint itself consists of adjustable steel side bars with a windlass and ratchet arrangement at the distal extremity. The bars are

Fig. 2.—Oblique fracture of shaft of femur before reduction.

placed laterally on the affected side and fixed with several turns of plaster bandage. This is now braced with a cross-bar of wood and plaster between the splint and the opposite leg. The traction is now completed by connecting the pin or other means of attachment by inelastic cords to the windlass. As the cords are made taut, counter-traction occurs through the opposite side as a mechanical consequence. The unsupported portion of the affected limb is suspended by a hammock arrangement, just as in use of a Thomas splint.

In obtaining traction of the humerus, the principle is the same, making use of a shoulder spica. The arm is placed at right angles to the chest, and the forearm at right angles to arm. The plaster is cut away at the outer border of the forearm, sufficient to allow traction at the elbow.

There are several precautions to be considered:

1. The position of equipment must be correct and in proper alignment.

2. In case of the lower extremity, the knee of the uninjured side should be placed in a neutral position of slight flexion and be well padded.

3. The foot should be placed at right angles to the leg, and the heel and plantar surfaces should be extremely well padded. If this is overlooked, trouble will certainly be the result, for the heel acts as the pivot on which the traction is produced.

4. The principal precaution to be observed in caring for the upper extremity is that the axillary region of the affected side be well padded.

Fig. 3.—Same as Fig. 2, after reduction. Final results—limbs of equal length.

The advantages of this method of traction can be summarized as follows:

First, and most important, there is afforded a point of fixation from which there is produced a steady, continuous, unrelenting traction, which can be varied with the greatest accuracy by regulation of the windlass. No other arrangement, such as the weight and pulley, supplies this attribute.

Having no parts connected to the bed or a frame, transportation becomes practical and nursing greatly simplified. The patient can be turned without discomfort, and this should be done at least twice a day.

This equipment, when carefully installed, leaves the patient free from pain and reasonably comfortable.

Deviations in alignment may be remedied by application of pressure and manipulations during the course of traction.

Fig. 4.—Comminution of femur treated with traction-plaster splint, giving a useful extremity with no shortening.

With the use of this splint, many cases, particularly of oblique and comminuted fractures, can be satisfactorily handled, avoiding, in many instances, open operations. The traction works admirably in preparing congential dislocated hips for subsequent reduction.

When using the splint for the upper extremity, the patient is not necessarily confined to bed.

In conclusion, I believe that we have, in the use of this method of traction, gained a forward step in the handling of a very difficult class of cases, and the successful utilization of its advantages lies in the care and precision used in its application and the judgment shown in keeping the proper adjustment during the post-operative period.

1100 *West Franklin Street.*

IS THE FAMILY PHYSICIAN ANY LONGER A NECESSITY?*

J. H. HIDEN, M. D., Pungoteague, Va.

Before answering this question we may ask ourselves what sort of a man we have in view. There seems to be generally a hazy conception of the character and qualifications of this physician. This is partly because there are various types of the family physician recognized as legal practitioners. Of these, at least four types are fairly well defined.

The first type, though a man of general culture and excellent social qualities is evidently becoming a misfit and really belongs to a former age. He is more a sympathetic, neighborly adviser than a progressive physician of our day.

The second type is more commercial in spirit than either scientific or humanitarian. He enters the profession simply for a livelihood and so naturally, avoids, as much as possible, the persistent application, laborious work and trying responsibilities that are so essential for the best training. He follows the lines of least resistance and then, later on in life, wonders why he is held in so little esteem.

The third type is the medical theorist. He is well-informed in the theory of general medicine and would be a very useful physician but for the lack of practical assimilation. This deficiency carries with it timidity—and he becomes too anxious for frequent consultants. This lack of self-reliance reacts upon his patients in diminishing confidence, and this, in turn, increases his timidity and diminishes efficiency.

The fourth type is the trained clinician who is wide awake to medical progress, is self-reliant, and at home when facing responsibil-

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ity. By his close application and interest in his chosen profession he has developed a versatility of powers in many lines of his work. Indeed, it is remarkable to observe the efficiency of such men when they develop a great zeal for service. A notable example of this is recalled when a certain British physician was once asked if he were an eye specialist. His reply was, "No, only a general practitioner, but I have successfully removed several hundred cataracts."

Now with these four types of the family physician before us, it is not difficult to see that confusion of thought might arise in the public's estimate of the family physician. But this review of these different types of men does not entirely clear up the hazy atmosphere that veils this question. Other factors enter our problems as to the present value of the family physician, and to some of these I invite your attention.

1. In dealing with the progress of our age, the family physician has many innovations to face—the in-roads upon his line of work by the modern methods of holding public clinics; the vast work of preventive medicine that is conducted by both Federal and State officials; the constant rush into specialization in almost every line; the rapid accumulation of hospitals and free dispensaries all over the country and the numerous formations of group practice. All present a sort of hostile front, and his outlook for professional success seems at times almost appalling.

2. Another condition this physician faces is the dominating influence of what we call standardization. This has developed mostly from the prevailing teachings in our prominent hospitals and clinics. Doubtless, instructions along this line within conservative limits have been a blessing to our general hospital work; but, when pre sed beyond these limits, such dogmatic instructions are not altogether conducive to the general practitioner's interest, and I am glad to see considerable reaction developing among our ablest thinkers toward this wholesale demand for standardization. Allowing me a little digression just here, it seems to me we have enough to contend with in our struggle against quackery, graft, fraudulent measures of advertising, the hordes of unprincip'ed drug venders, and the tendency of the public to be so easily humbugged by these public impostors, without our own leaders inflicting hardships upon so many of our most talented and faithful within our own ranks. The truth is, the general practitioner cannot strictly follow our modern hospital views of standardization in many lines of work, but, if let alone, he can often do better by following his own judgment in any given case. This being true, many of our most talented physicians, chafing under this often autocratic influence, become restless, critical and defiant, while others, more timid, become often discouraged and hampered in their work. Others still, among the submissive class, are not always on the high road toward progress, but often fall into the rut of a sort of "self-satisfied standard mediocrity" (Henry A. Christian). Further, the able family physician fully realizes the limitations of standardization in his general practice. He sees the many conditions of life in which the personal equation and the environment enter. Every sort of a modification of the best standards under ideal conditions in almost any line may have to be made to suit entirely different classes of people living under different conditions and environment, and so, in the last analysis, the physician's qualifications, training and matured judgment must be his guides in any given case. To sum up this whole matter, to my mind, in the face of these well known facts, this continual harping upon standardization appears little more than a modern cry of a self-satisfied element, a self-glorification of what Dr. Henry A. Christian, of Harvard has termed: "A standard mediocrity." Moreover, the natural drift of this dominating course seems to be a strong tendency to undermine public con'dence in the family physician—that truest, most sacrificing and valuable friend the public has ever had.

3. Again, in dealing with the charlatan and the quack, the family physician is the man who fights the winning or losing game. Others in the profession may offer a helping hand, but because we are so vitally affected by the insidious actions of these frauds, we have to fight the battles for professional progress as well as for public health protection. This often places us in a delicate situation in the eyes of the public; for often many of our citizens view our noblest claims for public protection as merely a contention between a persecuted class of "irregulars" and the quarrelsome element of the mediocrity of the established profession. Moreover, in this fight for principle and justice, the family physician also

realizes that he is dealing with a public that cannot see beyond the surface of medical values, and is generally most fascinated with spectacular display, ostensation and what appears remarkable, failing to see any special merit in the quiet student's life of the modest, cultivated, trained physician. What a commentary upon this whole situation!

Returning to my first three types of the family physician, it is obvious that they, though often more or less useful in many localities, are not, upon the whole, meeting the requirements of our times. Under these conditions, they must necessarily lose ground in public esteem. It may be asked, then, could not these men be easily spared from the profession? My answer is positively no. They, with all their deficiencies, are still needful until we can develop other men of a higher order to fill their places; otherwise, we would open the field of medical practice to a larger percentage of quacks and nostrum venders. Our first consideration, then, should be to give these physicians a helping hand, our sympathy, and encouragement for greater efforts to meet the demand for a higher order of efficiency.

Further, the fourth type of the family physician may be again considered. As stated before, he is the well trained clinician, competent and efficient, and thus eminently qualified to make the required adjustments to the many conditions of life. By his breadth and accuracy of knowledge and powers of assimilation, he often appears to diagnose his cases by the knack of intuition. To the physician who had never acquired such an art the whole work of this accomplished physician is a series of happy guessing. This fine art, however, is exactly what the public now needs to be blessed with—a more economical and efficient service. It is also what we need to establish ourselves in public confidence. Such a development of efficiency and economy in general practice would be our greatest asset in saving the profession from drifting into the entanglement of State medicine with its ultimate autocratic domination—a condition in which we could no longer enjoy the blessings of a Jeffersonian freedom, but one that would thrust upon us a sort of Mussolini fascism.

In conclusion, my time limit will not allow me to present my feelings of admiration for the noble services rendered the public by the family physicians of our country; for I feel that if I could "speak with the tongues of men and of angels" I could hardly do them justice. So I will simply mention the value of their great work in the preservation of the medical profession itself. It has been said that the medical profession, with all its departments and conflicting interests, spreads out before us like a vast crazy quilt in a very fragile state. Seeing the profession in this light, I may add that it takes the combined efforts of the general practitioners of our country, with their high ideals of ethical training and their noble conceptions of the value of unity, to knit together these apparently incompatible sections into one grand, harmonious whole. How can any of us truthfully say that these physicians are no longer a necessity?

THE X-RAY IN EMERGENCY SURGERY.*

M. H. TODD, M. D., F. A. C. S., Norfolk, Va.

I trust that roentgenologists will pardon my seeming invasion of their domain, judging by the title of this paper. I am, of course, not in any sense an X-ray man, and can only discuss the matter from the standpoint of the surgeon.

The most important single diagnostic agency at our command in the whole field of emergency surgery is the X-ray. I wish to speak first of its use in fracture work, and then in the case of certain abdominal emergencies.

FRACTURES:

It was formerly taught that the X-ray was to be considered merely a useful adjunct in the diagnosis of fractures, which should in the first instance be diagnosed by clinical methods. The physician was enjoined to palpate the fracture as best he could, through thick or thin layers of muscle, move it about, demonstrate crepitus by rubbing the broken ends together, and try to make up his mind whether it was probably oblique, transverse or comminuted, and whether he could likely make it stay in place if he once got it reduced. It was felt that to rely primarily upon the X-ray, instead of these clinical procedures, was to confess rather a lack of diagnostic ability.

I was similarly enjoined, when I began fracture work eighteen years ago; and was soon impressed with the extraordinary degree of skill that a man would have to possess, if he were to really find out all he ought to know about a fracture by clinical means. I was

*Read before the sixty-second annual meeting of the Medical Society of Virginia, at Roanoke, October 6-8, 1931.

fortunate in always having the X-ray immediately available, and I could not help but note the precision and clearness of the details as shown on the X-ray film, in contrast to the incompleteness of my own clinical findings.

There have been masters of surgery in the past who did not have the X-ray, and whose

Fig. 1.—Transverse fracture: no tendency to displacement after reduction: simple splintage.

Fig. 2.—Comminuted fracture: little tendency to further displacement; good result with simple splintage.

good results in treating fractures bore witness to their personal expertness; but there is no question that the generality of end-results some years ago did not reach the high plane that we should attain today. And there can be no doubt that this was due to a lack of accurate diagnosis.

The simple fact is this, that where the X-ray is not available, the physician will have to be contented with only approximate diagnosis, and this may hamper treatment a good deal; though even so, quite good results can be obtained with care, and with experience. But with modern equipment and knowledge, almost perfect end-results ought to be the rule, and the patient has nowadays the right to expect them; and to attain such ends, a precision of diagnosis is necessary, which is quite out of the question without the X-ray. Let me illustrate my point at the end of this paper, by calling attention to several different kinds of fracture, all of which may feel much the same to the examining hand, but which call for quite

Fig. 3.—Curved fracture-line; cannot be maintained in good position by simple splintage.

Fig. 4.—Oblique fracture femur into knee-joint; either skeletal traction, or better, plating, absolutely essential to obtain good result.

different types of treatment, if suitably good results are to be obtained.

Further, there are certain fractures that give only obscure signs, and cannot be definitely diagnosed at all without the X-ray, and indeed without unusually clear films; among these are certain fractures of the spine and the pelvis. I have discussed these fractures in previous articles, and will only mention them here.*

Where, therefore, the X-ray is available, preliminary attempts to make a detailed clinical diagnosis of a fracture are not in order; for these manipulations are not only quite inaccurate, but they are entirely capable of doing considerable harm, both by adding trauma to tissues already damaged, and sometimes by causing needless displacement where the fracture was primarily in good position. I do not wish to labor the point unduly, but there is just one primarily important thing to be done when a fracture is suspected: take an X-ray.

Some care is needed in taking the film, and the roentgenologist is entitled to all the help you can give him as regards the probable location of the fracture, judging by disability, localized tenderness or deformity. The film should always be made in two planes, which should be as exactly as possible antero-posterior and lateral. Otherwise only an imperfect idea of the fracture may be obtained, with confusing distortion. Stereoscopic films may be necessary, though not often required in fractures of the extremities.

Having thus paid tribute to the supreme value of the X-ray in diagnosing fractures, let me call attention to its possible errors. In the first place, it may fail to show a fracture where one really exists. I have several times failed to definitely diagnose a fracture of the spine or the pelvis until repeated films had been made, perhaps until callus had actually appeared. Again, it is well known that the X-ray is not especially dependable in the case of fractures at the base of the skull. What is more surprising, however, is the fact that very occasionally fractures of even the smaller bones, easily visualized, may be missed; I have actually failed to find a fracture of a metatarsal until it shortly afterward became displaced.

These errors, or faults, are not at all frequent. They are similar to the occasional errors inherent in all laboratory procedures, and simply indicate that judgment is needful in interpretation.

If you will now pardon an elementary statement, X-rays should always be taken after a fracture has been reduced, to verify its position. Further, films should be taken at intervals during the period of healing, both to be sure that correct position is being maintained all along, and to follow the progress of callus formation. Many a good result has been spoiled by the fact that fractures do not always stay put, though correctly reduced at first; or by the fact that undue weight-bearing has been allowed before there was sufficient union to stand the strain.

From the medico-legal standpoint, nothing is more important than to have X-ray records of the case; for juries are nowadays perfectly familiar with the fact that these should be taken, and failure to do so can only be interpreted by them as evidence of incomplete treatment.

One other point that I wish to mention, before leaving the subject of fractures, is the method of reducing them under direct vision, by the fluoroscope. This is a most efficient procedure, and permits a finesse and an exactness of control that can hardly be obtained in any other manner. It is always to be recommended where the equipment is available.

Before passing to abdominal emergencies, let me mention that infection with the bacteria of gas gangrene can be determined quite early by the X-ray film; much earlier than the appearance of crepitation. Gas is shown as little dark bubbles in the soft parts, very easily seen if looked for; and their detection may enable early treatment that will avert the necessity of amputation, and may indeed save life. The point is to be remembered especially in treating compound fractures, though it is quite true that the infection is unusual. By the way, a little air sometimes gets into the tissues in compound fractures, and gas may be feared; but it does not increase, and repetition of the film after a few hours will clear up the matter.

Abdominal Emergencies:

In two abdominal emergencies, namely acute perforation and acute intestinal obstruction, the X-ray will establish the diagnosis earlier, and more certainly, than any other agency.

Perforation.—Acute perforation of any part of the stomach or intestine will practically

*M. H. Todd, Fractures of the Pelvis, Va. Med. Monthly, March, 1931; Fractures of the Spine, Southern Med. & Surgery, June, 1931.

always permit the escape of gas within the peritoneal cavity; that is, pneumoperitoneum. If then the patient is held up sitting for a moment, a film taken through the middle of the trunk will show a little clear line of gas separating the diaphragm from the liver. This

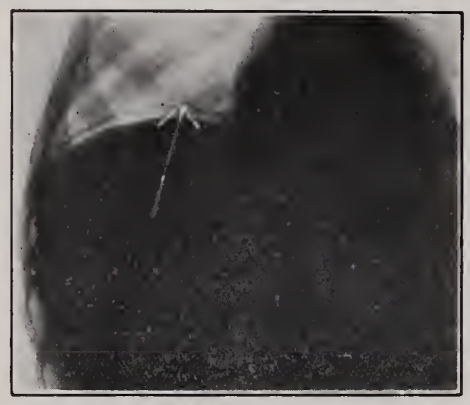

Fig. 5.—Diaphragm separated from liver by gas; acute perforation of intestine.

Fig. 6.—Dilated small bowel, with suggestion of ladder pattern; acute obstruction.

is an infallible indication of perforation, the only other condition giving rise to it being the surgical enriosity of gas bacillus peritonitis.

It can be detected very early after perforation has occurred—within the hour as a rule. It is important to have the patient hold his breath momentarily, and the exposure should be brief or snapshot.

This diagnostic sign is present after any form of rupture or perforation—gunshot or stab wounds, typhoid perforation, perforation of duodenal ulcer. There is one exception: perforation of the appendix does not give the sign, for usually no gas escapes; and occasionally, perforation of the stomach is said not to give it, for occasionally it contains no gas or air, so that none escapes. Otherwise, the X-ray sign is pathognomonic. Let me emphasize that I am speaking of acute perforation: not subacute or chronic perforation of gastric ulcer for instance on the posterior surface, slowly forming an abscess. I am limiting myself in this paper to emergency conditions.

Fig. 7.—Drawing from illustration by Case, article cited; fluid levels, surmounted by gas, in small bowel area: acute obstruction.

I should like to refer you to my previous article on this subject, in which case histories are given, and some of the literature discussed.*

Obstruction.—The fact that acute ileus, intestinal obstruction, can be shown by the X-ray is not very generally known. The matter has been clearly described by Case, of Chicago,† and I have had opportunity to verify his statements several times personally.

If flat films are taken of the normal abdomen, gas is to be seen in the large bowel, but little or none in the small bowel. In the presence of obstruction of the small bowel, however, gas is to be found in the middle of the abdomen in the small bowel area, and dilated loops may be made out, sometimes with the

*M. H Todd: Amer. Journal Surg., May, 1927, p. 449: Roentgenography in the Diagnosis of Gastro-Intestinal Perforation.

†Case, Jas. T.: Amer. Jour. Roent. & Rad. Therapy, May, 1928: Roentgenological Aid in Diagnosis of Ileus.

ladder arrangement. In addition, if the patient is held up sitting for a moment, a film will show little collections of gas in the small bowel area, with separate fluid levels below them.

Barium is not generally necessary, and I think it is well not to use it if it can be avoided; but if it is used, a characteristic herring-bone appearance of the dilated small bowel may be seen, and this clearly shows its obstruction and dilatation.

I am not prepared to say that this sign is as certainly reliable as the sign of perforation described above; for in at least one case of my own, the X-ray appearance of obstruction was pretty definite, and yet the patient was relieved by enemas with disappearance of the signs in the succeeding film. But where the abnormal appearance persists, laparotomy becomes advisable, and may be obligatory.

The X-ray sign of obstruction becomes definite long before any other clear indication is present: long before noticeable distention or feculent vomiting, and before there is any alteration in the facial expression to indicate trouble.

I cannot too strongly urge that in this difficult condition, the X-ray film be made as a routine when there is doubt; though as I have said, clinical judgment must by no means fail of being used.

Pneumonia:

This is, of course, not an abdominal condition at all, nor a surgical one; but it sometimes gives very confusing abdominal symptoms. I simply wish to mention it because the X-ray will often confirm or rule out its presence. And it is certainly very uncommon to find a patient suffering both from pneumonia and from an abdominal emergency at the same time, and indeed I have personally never come across such a case, though I realize that there is no law against it. So that if pneumonia is found, it may serve as an explanation for some of the abdominal pain and tenderness that the patient is having; and I should say that it justifies a little delay before a decision is made to perform laparotomy.

Summary

The X-ray, where available, is the procedure of primary importance in the diagnosis of fractures. It should be carefully taken, and will nearly always give accurate information with a detail that cannot be obtained in any other way. Follow-up X-rays should always be taken, and should be kept as records. It is necessary, however, to remember that the X-ray is not quite infallible, and unless interpreted with judgment, may lead to wrong conclusions.

In acute gastro-intestinal perforation, the X-ray will show gas above the liver, clearly separating the diaphragm from it; the sign is pathognomonic.

In acute intestinal obstruction, the small bowel may be seen to be dilated and show separate fluid levels surmounted by gas. This sign is very strongly suggestive, and appears early. I am not prepared to say that it is as certain as the sign of perforation, but it may help enormously in early diagnosis, and should never be omitted when there is doubt.

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TRANSPLANTATION OF THE URETERS INTO THE LARGE INTESTINE: WITH A REPORT OF THREE CASES.*

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The successful transplantation of the ureters into the large intestine is dependent upon the formation of a valve at the point of anastomosis for the protection of the kidneys. The discovery of the valve principle by Dr. Robert C. Coffey while transplanting the common bile duct, in 1909, and the application by him of this principle to the transplantation of the ureters, in 1910, have revolutionized the treatment of exstrophy of the bladder and many other conditions in which the bladder must be dispensed with as a reservoir for urine.

The valve is formed by making an incision about an inch in length through the peritoneal and muscular coats of the intestine, exposing the mucous membrane. The ureter which has been prepared for transplantation is passed into the lumen of the bowel through a stab wound in the mucosa at the lower end of the incision and muscular and peritoneal coats are closed over the ureter so that for almost an inch only the mucous membrane lies between the ureter and the lumen of the bowel. This intervening mucous membrane functioning as a valve protects the kidney and ureter from the pressure existing in the bowel and from the regurgitation into the ureter of intestinal gases and fluids.

*Read by title at the sixty-second annual meeting of the Medical Society of Virginia, at Roanoke, October 6-8, 1931.

Previous to Coffey's experimental work in 1909, numerous efforts to transplant the ureters into the intestine had been made with only an occasional success. The discussion of the most noteworthy of these attempts, together with the development of his own operation is ably presented by Dr. Coffey in a paper entitled "Transplantation of the Ureters into the Large Intestine" (*Surgery, Gynecology and Obstetrics*, November, 1928, pp. 595-621).

My first transplantations were done on dogs in 1922. Of six animals operated upon, five survived and were examined at intervals of from two weeks to one year. In one of these there was obstruction of the ureter at the point of anastomosis, apparently due to inflammatory reaction. In the remaining four, there were functioning valves and normal kidneys on the transplanted side.

In December, 1929, I first had an opportunity to use the method in a case of exstrophy of the bladder. About six months following the first operation which resulted in death from peritonitis, I was fortunate in securing two other cases, and the results of the operation in these cases proved in every way satisfactory.

Case Reports

Case 1.—Mr. J. A., age 21, was admitted to the Sheltering Arms Hospital on December 5, 1929, because of incontinence of urine. The patient's health and development had been normal since birth with the exception of the fact that he had a complete exstrophy of the bladder, with resulting incontinence.

Physical examination showed a well-developed, young man with all physical findings normal except chronic tonsillitis, dental caries, some shortening of the distal phalanges of the fingers with rather small nails, and a bulging, eroded mass just above the pubis. There was a deficiency in the pubic arch and the penis was short, flat, and somewhat curled upward. The urethra was absent. The ureteral orifices could be made out near the lower angle of the mass and from them urine spurted intermittently.

The urine was alkaline, specific gravity 1021, and contained a definite trace of albumin, and microscopically a few leukocytes and a few red blood cells. Blood examination showed hemoglobin 95 per cent, leukocytes 5,000, polymorphonuclears 50 per cent, eosinophiles 3 per cent, lymphocytes 47 per cent. Blood urea 32 mg. per 100 c.c. Blood Wassermann was negative.

The patient developed chickenpox shortly after his admission which delayed operation nearly two weeks.

On December 21st, both ureters were transplanted in the upper rectum near the sigmoid, in the following manner: A long incision was made just to the left of the midline and the intestines were packed off well above the true pelvis with gauze. A soft rubber-covered clamp was placed on the sigmoid about twelve inches from the anus. The patient's hips were pulled toward the foot of the table and an assistant passed a sigmoidoscope up to the clamp on the intestine. A small rubber tube was passed through the sigmoidoscope and a current of water turned on, washing out the bowel as the sigmoidoscope was gradually withdrawn. As soon as the fluid returned perfectly clear, the irrigation was continued with a pint of 2 per cent solution of freshly-prepared mercurochrome. All the fluid possible was drained off and the sibmoidoscope was again passed up to the clamp and with a pair of long forceps, this portion of the bowel was lightly packed with gauze. The ureters were then identified, dissected free for about three inches, ligated as near the bladder as possible, and divided near the ligature. The stumps were cauterized with pure carbolic acid. The proximal stumps were brought into the wound and split for about one-quarter of an inch. Two No. 10 ureteral catheters prepared by placing a cuff of rubber tubing around them about 10 cm. from the tips were then passed into the ureters up to the rubber covering. The ends of the ureters were pulled over the rubber covering and each ureter was tied to its catheter with two ligatures of 00 plain catgut, one over the rubber-covered area and one just immediately above it. Two incisions were then made, one about the junction of the rectum and sigmoid on the left side, passing from the junction of the colon and mesocolon downward and toward the midline at about an angle of 45° until the midline of the intestine had been reached. The incision was deepened until the mucosa could be seen bulging into the wound for the entire length of the incision. The muscular coats were stripped back with the handle of a knife. A similar incision was made on the right side of the bowel about two inches below the lower end of the left incision. Stab wounds were then made in the lower angles of the intestinal

wounds and a wisp of gauze from the packing was pulled through each stab wound. With fine linen the lower ends of the catheters were sutured to the gauze. (Figure 1.) The gauze

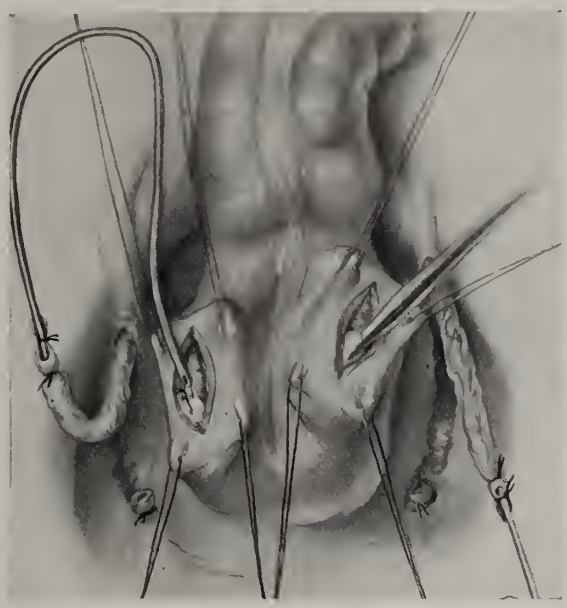

Fig. 1.—First stage of Coffey operation of transplantation of ureters in the large bowel. The intestines have been packed off, a clamp has been placed on the lower sigmoid, and the rectum and portion of the lower sigmoid have been irrigated and packed with gauze. Incisions have been made down to the mucosa and catheters fixed into the ureters. Gauze has been brought into the lower angle of the wound in the intestine and the tip of the catheters sutured to it. As the gauze was withdrawn from the rectum, the catheters and ureters were pulled into the bowel.

was then gradually removed from the anus and the catheters were guided into the lumen of the bowel. As the catheters appeared at the

Fig. 2.—On the right side the ureter is seen lying in its newly-formed bed, the muscular coats of the bowel being sutured over the ureter. On the left side the peritoneum has been likewise sutured.

anus, they were grasped and pulled upon until the ends of the ureters were brought into the bowel for almost an inch. The remaining gauze was then removed from the rectum. Interrupted sutures of 00 tanned catgut were placed in the lower angle of the intestinal wounds, including the muscular layers of the intestine and a bite in the ureters. The wounds in the bowel were then sutured over the ureters with two rows of continuous sutures of 00 tanned catgut, the last suture closing in the peritoneal surface. (Figure 2.) The flaps of parietal peritoneum which had been dissected from the ureters were brought over and sutured to the bowel in such a way as to cover the area of transplantation. (Figure 3.) A gauze pack was placed in the pelvis and walled off from the general peritoneal cavity with a layer of thin rubber tissue. The gauze and rubber tissue were brought out at the lower angle of the wound. The wound was closed in layers, the peritoneum with a continuous mattress suture of No. 1 tanned catgut, the aponeurosis with a continuous lockstitch suture of No. 1 tanned catgut. Several interrupted sutures of s. w. g. were taken, including the muscles, aponeurosis and skin. The skin was closed with a continuous mattress suture

Fig. 3.—The completed operation. The flaps of parietal peritoneum have been sutured across the bowel, entirely covering the field of operation.

of 00 tanned catgut and the s. w. g. sutures were tied across the wound.

The anesthetic lasted two hours and fifty minutes. The operation lasted two hours and

thirty-six minutes. The patient left the table in good condition, pulse 100.

On the night following the operation, there was a rather sharp rise of temperature to 104, pulse 130. On the following day, the temperature dropped to 101, pulse to 110, and remained about at this level with occasional fluctuation of the temperature down to 99 for twelve days. On the day following the operation, there was an elimination of twenty-six ounces of urine, about equally divided between the two kidneys. During the remainder of the patient's life, the output of urine ranged from about 1,500 c.c. to 2,000 c.c. in twenty-four hours. On the day of his death, January 3rd, thirteen days after operation, the elimination was 1,800 c c. of urine. For ten days after the operation, with the exception of the temperature as noted and a moderate degree of distention, the patient did quite well. He enjoyed his food and complained of no particular discomfort.

On December 26th, five days following operation, the right catheter was draining poorly and was removed without difficulty. The left catheter was removed the following day. There was no change in the patient's condition immediately following removal of the catheters. Drainage was removed on the 28th of December, seven days after the operation. At this time an abscess was found in the abdominal wall and was opened and drained with no apparent influence on the course of the temperature. On January 1st, ten days after operation, the temperature went again to 103, pulse 103, and the patient began to vomit. On the following day, he was in about the same condition and a high enterostomy was done on the left side. Although the enterostomy drained well, the patient continued to vomit and grow worse, and he died on January 3rd from general peritonitis. The following is an abstract of the autopsy report:

"*Anatomical Diagnosis:* General peritonitis; multiple purulent sinuses honeycombing abdominal wall; congenital exstrophy of the bladder with ureters opening on to lower abdomen just above the symphysis pubis; congenital malformation of the penis with very wide complete epispadia; recent technically successful operation for implantation of the ureters into the rectum; pyelitis and multiple cortical abscess of both kidneys; ureteritis of the ends of both ureters just above their implantation into the wall of the rectum; recent left rectus operative incision, now badly infected.

"*Microscopical Diagnosis:* 1. Kidneys: Pyelonephritis with multiple small abscesses. Cloudy swelling of renal tubular epithelium. 2. Rectum: Subacute proctitis. 3. Adrenal: Marked fatty degenerative infiltration of cortex. 4. Chronic epididymitis."

I was present at the autopsy and the kidneys, while definitely infected, would in my belief have recovered in the absence of a general peritonitis. It is probable that the infection of the peritoneum had something to do with the kidney infection. The cortical abscesses mentioned were few in number and very small. The cleanest portion of the abdomen seemed to be that area about the transplanted ureters, and the peritonitis, which would have been from the colon bacillus had the infection arisen from the site of anastomosis, was definitely streptococcic. It is my belief that the abdominal wound was infected in some way during the operation and that there was a wound abscess which ruptured into the peritoneal cavity, setting up the general peritonitis. This conclusion was reached because the entire peritoneal suture area had broken down, the peritoneal margins were widely separated, and the abdominal wound definitely infected with

Fig. 4.—Master B. G., age five years. Drawing made following operation for transplantation of both ureters into the large bowel by the Coffey technic. Drawing illustrates the deformity as noted in this condition.

burrowing abscesses into the surrounding tissues. The patient had recently recovered from an attack of chickenpox and some scabs were

noticed on the body, one of which was on the abdomen, at the time of operation.

Case 2.—Master B. C. G.,* age 4½ years, was admitted to St. Elizabeth's Hospital April 23, 1930, because of incontinence of urine since birth. With the exception of the bladder defect and a right inguinal hernia which necessitated operation at eighteen months because of strangulation, his health and development had been normal.

He was a fairly well-nourished child, and the general physical examination was negative except for a recurrent right inguinal hernia and a red, protruding mass just above the pubis. (Figure 4.) The area contained a number of eroded areas which bled readily. Near the lower margin were the ureteral orifices from which urine spurted at regular intervals. The pubic bony arch was incomplete, the rami being joined by a fibrous band. The urine collected from the surface was cloudy, acid, showed a trace of albumin, a few pus cells and red blood cells. Blood examination showed hemoglobin 65 per cent, r. b. c. 3,000,000, leukocytes 7,160, neutrophiles 60 per cent, small mononuclears 23 per cent, large mononuclears 3 per cent, eosinophiles 3 per cent, basophiles 8 per cent, myelocytes 2 per cent. Blood Wassermann was negative.

This patient was operated upon April 24, 1930, the same procedure being carried out as in Case 1, with the exception that in place of the gauze pack in the pelvis for drainage two cigarette drains were placed down into the pelvis just below the transplanted area and brought out to the left of the incision through a stab wound. The catheters drained well and the child's condition was satisfactory until the third postoperative day when he became greatly distended and vomited. An enterostomy was done which drained well. The distention and vomiting were relieved and within twenty-four hours his condition was again satisfactory. Both catheters were removed on the fifth postoperative day. There was no reaction following removal of the catheters. The urine drained freely from a small rubber tube which was placed in the rectum when the catheters were removed. He had a normal stool on the tenth postoperative day and the enterostomy tube was removed. His convalescence continued uneventful, and he was discharged May 23, 1930, in good condition.

He returned to the hospital April 20, 1931, for repair of a right inguinal hernia and removal of the exstrophied bladder.

At the present time, the child is in good health, his weight and appearance are normal, and he retains his urine four hours or longer during the day and frequently sleeps through the night.

Case 3.—Lillie H., age 5 years, was admitted to Sheltering Arms Hospital on June 22, 1930, because of constant dribbling of urine since birth. She had some difficulty at times controlling her bowels, otherwise her health had been good.

The patient was small for her age and appeared anemic. The general physical examination was negative with the exception of a dark red, protruding mass just above the pubic region. (Figure 5.) The mass was covered with congested mucous membrane. Near the lower border of the area, the ureteral orifices could be seen, from which urine spurted at frequent intervals. The pubic arch was incomplete, there being a separation of about two inches. The external genitalia were normal with the exception of the apparent absence of a clitoris. The urine collected from the surface contained a faint trace of albumin, few pus cells and numerous red blood cells. Blood

Fig. 5.—Lillie H., age five years. Drawing showing protruding bladder mucosa and abdominal hernia which frequently accompanied cases of exstrophy of the bladder.

*This case reported as part of a Clinic in Urology for Dr. John R. Caulk (Southern Medicine and Surgery, May, 1931, p. 320).

examination showed hemoglobin 50 per cent, leukocytes 18,000, polymorphonuclears 66 per cent, small mononuclears 34 per cent. Two days following admission she developed a rash and a moderate temperature and was in quarantine for about ten days as a scarlet fever suspect.

The patient was operated upon on July 16, 1930, and the same procedure was carried out as in Cases 1 and 2 with the exception that no drainage was used, and no packing was used in the rectum. (Figure 6.)

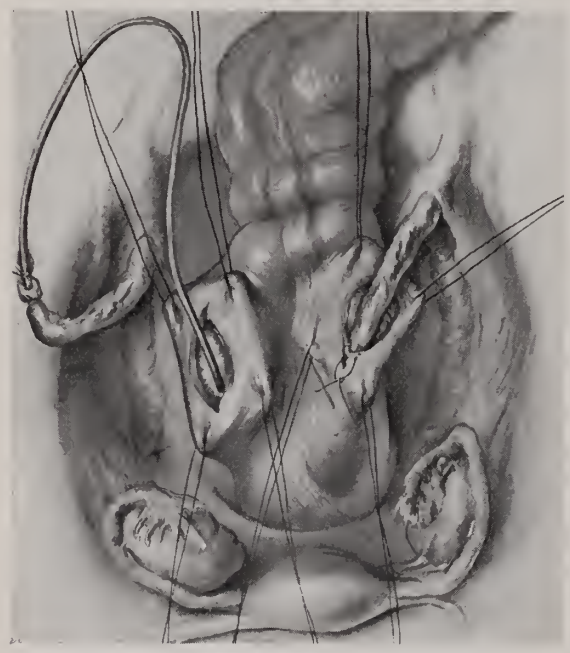

Fig. 6.—Catheters were fixed in ureters and passed through a nick in lower angle of wound in the intestine. An assistant with fingers in the rectum grasped catheters and pulled them down, pulling the ureters into the bowel. By dispensing with the gauze packing in children, time is saved and there is less trauma to the intestinal mucosa.

The immediate postoperative course was uneventful. The catheters drained well until the fourth day when both were removed. On the following day the temperature was 104° F., gradually declining to normal in about ten days. Two weeks following operation, the patient was out of bed and in good condition.

On October 9th, she was operated upon for removal of the exstrophied bladder and closure of the defect. She was discharged from the hospital November 1st in good condition. She had gained in weight, and had fair control of her rectal sphincter. The family physician stated, October, 1931, that the child has gained considerable weight, and the control though not perfect has improved. She frequently goes the entire night without an evacuation. She has had no further attacks of pyelitis.

Discussion

Three cases of transplantation of the ureters into the large intestine are presented, the first resulting fatally apparently from some break in operative technic. The infection, from all the evidence we were able to gather, did not arise from the site of the anastomosis. In the second case, there was an intestinal obstruction which may have been due to the placing of cigarette drains in the pelvis.

The third case, in which no drainage was used, made a smoother postoperative recovery, and in view of the fact that in neither of these cases was there any evidence of infection at the site of anastomosis, I feel that operation without drainage offers the best chance of a smooth convalescence and good results. In the third case no packing was used in the rectum. It seems to me that when an assistant can easily reach the catheters in the bowel, as in small children, the operation might be done quite as satisfactorily without the packing and with less trauma to the intestinal mucosa and a shorter anesthesia.

The operation for transplantation of the ureters, as developed by Coffey, offers the only satisfactory procedure of dealing with exstrophy of the bladder. It provides a safe method of handling those patients whose bladders have become useless because of destruction of the sphincters, intolerable pain, etc. It affords a possibility of more satisfactory treatment of certain types of malignancy of the bladder by transplantation of the ureters and complete destruction of the bladder either by surgical extirpation or by the cautery and radium.

INDUCTION OF LABOR BY THE ARTIFICIAL RUPTURE OF THE MEMBRANES.*

M. PIERCE RUCKER, M. D., Richmond, Va.

Progress in medicine rarely proceeds in straight lines, and our ideas and practices are more than apt to develop in cycles. The subject under discussion is a beautiful instance of this.

Herbert Spencer gives the following account of the "origin and mode of employment of

*Read at meeting of the Manchester Medical Society, September 1, 1931.

that purely English operation, induction of premature labor in cases of contracted pelvis. The first account of this method of treatment, which originated at a meeting of London obstetricians in 1756, was given to Denman by Dr. Christopher Kelly, and the first operation was performed successfully by Dr. Macaulay on the wife of a linen draper in the Strand. It was chiefly due to Denman's adoption and judicious advocacy that the operation became a favorite one in this country, long before it was accepted abroad."

"Denman employed it also successfully in two cases where previous children had died in utero at an advanced period of pregnancy."

Ramsbotham devised an instrument for the purpose of rupturing the membranes, on the principle of the tonsillancet, but shaped like a female catheter. He describes the mode of using it as follows: "Duobus sinistrae manus digitis, primo secundoque videlicet, in vaginam intromissis, index per os uteri inserendus est; deinde instrumentum, illo digito directum, usque ad ovuli membranas adferendum; quo facto ejus punctum occultum dextrae manus pollice intus pressum tenuia foetus involucra facile aperit, aqua uterina per canalem argenteum libere fluit, partusque dolores mox supervenient."

The present generation of obstetricians had apparently forgotten about the operation except for cases of hydramnion and occasionally for marginal placenta previa and abrupto placenta. Recently at Johns Hopkins the method as applied to normal cases at term has been revived because of a letter to Dr. J. M. Slemmons to Dr. Williams recounting enthusiastically his experiences with the method in private practice. Guttmacher and Douglas report upon 120 cases, 115 being term pregnancies. They divided their cases into three groups. In the first, they used quinine, castor oil, hot soapsuds enema and pituitrin applied intranasally. In the second group, they left off the pituitrin, and in the third group, they simply ruptured the membranes without any medication. All of their cases went into labor, but some had a long "latent period," the longest being fifty-two hours. In three cases the method was deemed unsatisfactory. The first, a xii para, had a latent period of forty-eight hours, developed an intrapartum infection that killed the baby and was finally delivered by craniotomy after manually dilating the cervix. The second unsatisfactory case, a v-para, had a latent period of forty-two hours. This patient also developed an intrapartum infection and was delivered by bag and mid forceps of a live baby. The third case, an ix-para, had a latent period of eight and three-fourths hours. A bag was introduced for the sake of the baby, which was born alive and spontaneously after a labor of four hours and thirty-five minutes.

In comparing the three groups, the authors conclude that the latent period was markedly shortened by preliminary castor oil and quinine but was apparently little influenced by the pituitrin. The amount of amniotic fluid that was lost when the membranes were ruptured apparently had no effect on the length of labor. The character of the cervix on the other hand had a direct influence. In general, the longer the cervical canal the longer the labor. The maternal and fetal results compared favorably with those of the clinic as a whole, there being no maternal deaths and a neonatal mortality of 5.88 per cent as against a neonatal mortality of 5.16 per cent in the last 14,315 deliveries in the clinic.

When compared to the group of induced labors with bags and bougies, the rupture of the membranes appeared unquestionably superior. When compared to a group of one hundred cases in which the membranes ruptured spontaneously before the onset of labor, the latent period was found to be longer in the spontaneous group (twice as long in the multiparae and four times as long in the primiparae) but there was no decided difference in the length of labor.

Our own study began with the appearance of Guttmacher and Douglas' article, and with the cases that Dr. Whitfield has kindly put at my disposal, comprises sixty-four. Twenty-nine were primiparae and thirty-five were multiparae. There was one set of twins among the latter. Fifty-three were at term and eleven were premature. Unlike Guttmacher and Douglas' group, ours were somewhat more difficult than our average cases. Eight cases had justo-minor pelves; three, flat rhachitic; and three, funnel pelves. Seven patients (20 per cent of the multiparae) gave the history of having lost one or more babies at previous deliveries. One patient had a well-marked diabetes and one case had a serious mitral stenosis with fibrillation and congestive

heart failure that was extremely difficult to control. The premature inductions of labor were done for the following conditions: toxemia, five times; contracted pelvis, four times (two of these gave history of neonatal deaths); once for increasing melancholia and once for serious heart disease (the case mentioned above).

In no case did we find it necessary to use an anesthetic for the rupture of the membranes. Various anesthetics and combinations of anesthetics were used in the conduct of labor. Sodium amytal either alone or supplemented with hyoscin was used forty-four times. Avertin was used thirteen times. Ether was used for the actual delivery thirty-five times, spinal anesthesia nine times, nitrous oxide-oxygen twice and chloroform once. When sodium amytal was used it was given before the membranes were ruptured. This made the operation somewhat more difficult as many of the patients were restless and uncooperative. On the other hand, the patients were pleased with this arrangement as they had no remembrance whatever of anything in connection with the birth of the baby except the initial dose of castor oil and quinine.

No attempt was made to determine the average duration of the latent period as many of the patients were so thoroughly under the analgesic that it was impossible to tell just when the pains started. The total duration of labor, from the time of the rupture of the membranes until the delivery of the placenta averaged fifteen and three-tenths hours in the primiparae and eight and four-tenths hours in the multiparae. In five cases bags were used when the patient did not go into labor within twenty-four hours. Three of these were primiparae and their labors lasted forty-eight, thirty-two, and sixty-four hours, respectively. If these be deducted the average duration for the primiparae was eleven and five-tenth hours. The two multiparae who were bagged had labors lasting eighteen and twenty-nine hours and if these be excluded the average duration of labor for the multiparae was seven and five-tenth hours.

For a number of years it has been my custom to deliver my patients as early in the second stage as was compatible with the safety of both mother and child. For this reason the number of operative deliveries in this series is no reflection on the method of inducing labor. There were nineteen spontaneous deliveries, fifteen mid forceps operations, twelve low forceps, thirteen versions and extractions, and five breech extractions. It is interesting to note that duration of labor in the breech cases varied from seven to twenty-eight hours and averaged fourteen hours. In none was it necessary to use a bag to aid in the dilatation of the cervix.

Table I

Showing Average Duration of Labor

	No. of Cases	Aver. Duration of Labor
I para	29	15.3 hours
II para	13	9 5 hours
III para	11	7.7 hours
IV para	4	7.2 hours
V para	3	12. hours
VI para	1	7. hours
VII para	1	4. hours
VIII para	1	5. hours
IX para	1	5. hours

Four patients had a febrile puerperium. Two of these had definite mastitis to account for the fever, which occurred after they had left the hospital. One patient developed a dysentery with moderate fever that began on the second day and lasted until the seventh day of her puerperium. The remaining one case had a low grade genital tract infection with a temperature above 100.4 for several days. There were no maternal deaths. There were three neonatal deaths, all occurring in the premature group. Two were delivered of toxic mothers and measured 44 cm. and 45 cm. total length. The third was an antepartum death. The mother was sent to the hospital at the seventh month with diagnosis of probable dead fetus. The rabbit modification of the Aschheim-Zondek test was negative and the X-ray films showed very definitely Spalding sign. Accordingly labor was induced and the mother delivered spontaneously a macerated fetus. These three deaths in sixty-five babies (one set of twins) gives a gross neonatal mortality of 4.31 per cent. There were no fetal deaths among the term cases.

Comment: The artificial rupture of the membranes for the induction of labor is a useful and reliable method.

In 7.8 per cent it was deemed advisable to supplement the method with bags, as it has been shown by Guttmacher and Douglas that a long "latent period" is conducive to infection.

The total duration of labor was fifteen and

three-tenths hours for primiparae and eight and four-tenths hours for multiparae.

The cases at term did better than the prematurely induced cases. The total duration of the premature labors averaged fourteen and eight-tenths hours. Two of the premature cases required bags.

The duration of the breech cases averaged fourteen hours.

References

Spencer, Herbert R.: The History of British Midwifery From 1650 to 1800. London, John Bale, Sons & Danielsson, Ltd., 1927, p. 138.

Ramsbotham, Francis H.: The Principles and Practice of Obstetric Medicine and Surgery, in Reference to the Process of Partuition. First American Edition, revised. Philadelphia, Lea and Blanchard, 1842, p. 272.

Guttmacher, Alan F., and Douglas, R Gordon: Induction of Labor by Artificial Rupture of the Membranes. *Am. Journal of Obst. and Gynec.*, 21:485, April, 1931.

Medical Arts Building.

MYELOGENOUS LEUKEMIA WITH AN ALEUKEMIC STAGE SIMULATING AGRANULOCYTOSIS—A CASE REPORT

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There are some internists who hold that all cases of agranulocytosis are aleukemic stages of myelogenous leukemia. This premise is not substantiated. The cases which have recovered and have had no history of recurrence, I believe, disprove this theory. Likewise, cases like that of Rutledge *et al*,[1] observed for many years with recurring agranulocytosis associated with furunculosis, certainly would suggest that all cases do not terminate in myeloid leukemia. However, the case that I report here, certainly in its first stage, gave the clinical and laboratory picture of agranulocytosis, and it terminated with the picture of myelogenous leukemia. There is one factor in this case which must be considered in thinking of the first stage as an aleukemic stage of a leukemia, namely, the effect of X-ray therapy. This case was given seven irradiations of one-half erythema dose each, and, as a very unusual reaction was noted following the last two irradiations, it may be that the stimulation of the bone marrow produced the second stage of leukemic reaction.

Very little is known concerning the effect of X-ray therapy on the blood picture of the blood dyscrasias. We use this method of treatment in a frantic effort to save our patient from a disease which is usually fatal, and with the hope that it will, in one type of case, stimulate the bone marrow to put out more granulocytes, and, in other types, we use it to decrease the number of white cells. St is true that in the first type, namely, agranulocytosis, we use a stimulating dose, and, in the other, we use a destructive dose, but it still remains true that even the best of roentgenologists are at a loss to know what happens following therapy in these cases.

If we accept Isaacs'[2] theory, that mild doses hasten the maturation of primitive cells, and heavy doses push the cells on to senility, then we might assume that, in the case reported here, the seven exposures were sufficient to mature enough cells to clear up the picture of agranulocytosis in the first stage, and then the continued action, or delayed action, would finally produce enough maturation to produce the picture of leukemia.

The case report which follows is presented in two parts, representing the two stages of the illness, so that the blood pictures can be separately studied.

The period between the two stages is from January 4, 1930, to January 18, 1931, two weeks elapsing between the patient's discharge from the hospital and his second admission.

Table I is the temperature chart for the week of December 12th to December 18th.

Table II gives the laboratory reports of the first stage, and Table III presents the reports for the second stage.

Case Report

Patient, R. S., white, male, aged 17 years, occupation electrician, first seen on December 2, 1930.

Chief Complaint:—Infected leg just below right knee. Inguinal adenitis, right.

Previous Personal History:—Negative.

Family History:—Negative.

Present Illness:—Ten days previous to onset patient had suffered an abrasion just below the right knee. This wound was caused by being struck by a piece of falling tin. Inasmuch as it caused no discomfort, it was neglected. A small amount of pus was noted by the patient after a few days, and on Decem-

1. Rutledge, B. H. Hansen; Pruss, O. C.; and Thayer, W. S.: Recurrent Agranulocytosis. Bull. Johns Hopk. Hosp., 46:369-389, June, 1930.

2. Isaacs, R.: Blood Changes in the Leukemias and Lymphotomata. Amer. Jour. Roentgenology, 6:648-655, December, 1930.

ber 4, 1930, a swelling in the right inguinal region appeared. I called to see the patient the following day and found a small amount of pus at the site of the original injury, and a fairly marked right inguinal adenitis. No evidence of venereal disease was found. The pus in the wound on the leg was evacuated and hot wet dressings of magnesium sulphate applied. An ice-bag was applied to the inguinal region. The following day the inguinal swelling had softened down in the center and the patient was sent to the hospital for surgical drainage. The temperature during these days at home had been elevated to 104. A blood count was ordered on admission to the hospital and only 3 per cent of granulocytes were found. The complete picture is given under laboratory reports. It was decided after this count was done to take a section of the gland involved for biopsy. This was done under ethyl anesthesia.

Physical Examination:—Fairly well developed white boy, aged 17 years. Looked acutely ill. B. P. 120/85. Temp. 103.4; pulse 100; resp. 20.

Patient showed evidences of anemia. Head, neck, mouth, throat, and lips were negative at this time.

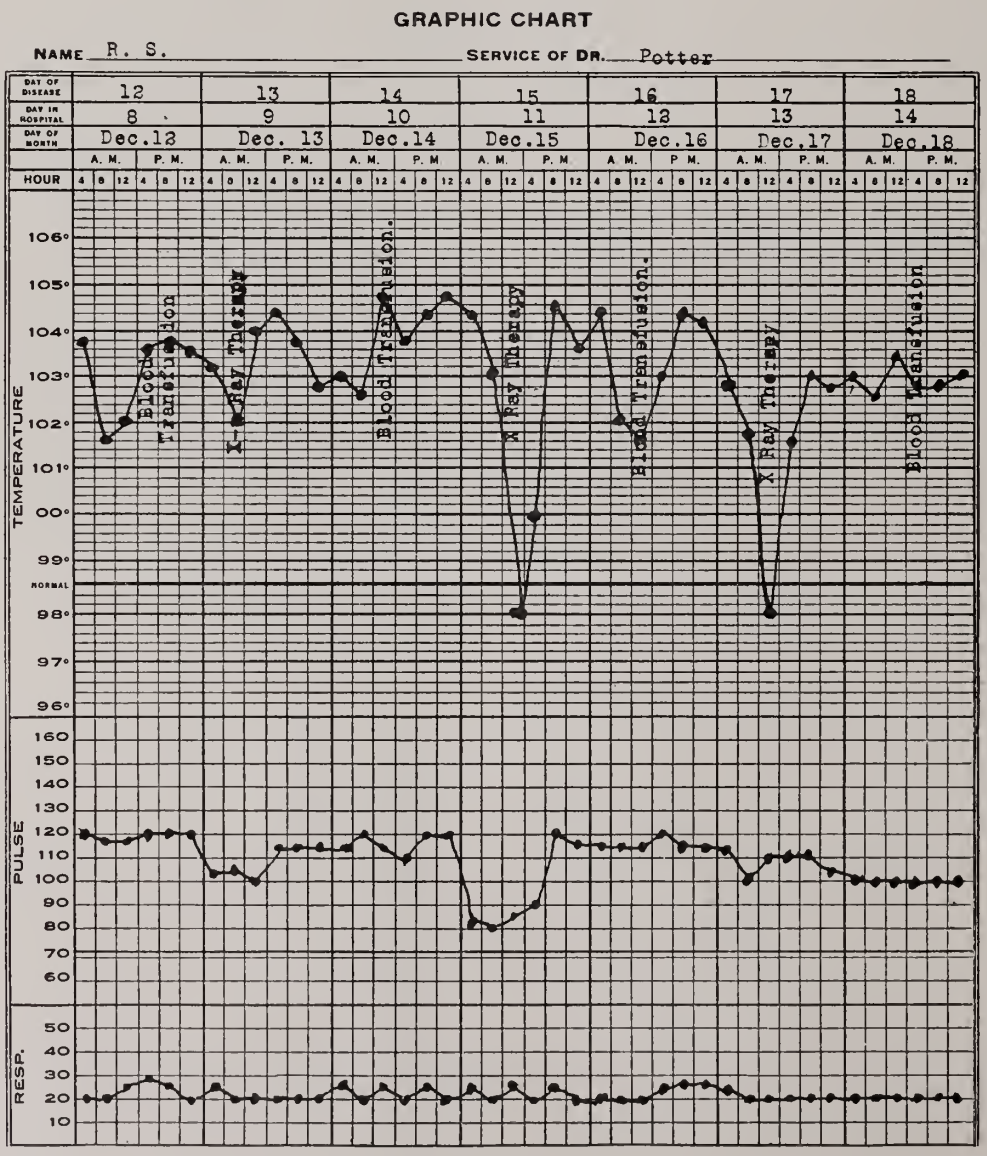

Table I.

Chest and heart negative.

Abdomen soft and flaccid; no tenderness, masses or rigidity elicited.

There was a marked swelling in the right inguinal region which was tender to pressure and red and soft at its center. Extremities showed a small infected area just below the right knee. There was no free pus apparent. Otherwise the extremities were negative.

Reflexes showed no deviation from normal.

Progress of Case:—Shortly after admission the patient was taken to the operating room and, under ethyl anaesthesia, an incision was made over the inguinal swelling. The tissue just under the skin was dark and necrotic in appearance. No free pus was encountered. A gland was removed for biopsy. The wound was packed with iodoform gauze and the corners closed with Michel clips, the center being left open for drainage.

The following day the total count had dropped to 6,200, as shown in the laboratory reports, and the red count showed a marked anemia. Donors were matched by direct matching and 500 c.c. of citrated blood given by the indirect gravity method. The following day half an erythema dose of X-ray was given over the chest and arms. 500 c.c. of citrated blood were given on the 8th, 10th, and 12th. The X-ray therapy was repeated on the 9th and 11th.

On December 11th, six days after admission to the hospital, small ulcerations appeared on the gums, typical of those seen in agranulocytic angina. There also was a large area of herpes involving the lower lip. Six centigrams of neoarsphenamine dissolved in one ounce of glycerine was used to paint the ulcerated gums.

The edges of the wound of operation had become black and necrotic, and the tissue in the wound itself was bloodless and dry.

On December 12th, seven days after admission, the patient complained of earache in the right ear. Upon examination the drum was bulging, and on the drum itself was a bleb filled with blood. The drum was incised and a sero-sanguineous fluid escaped, relief from the pain ensuing. Two days later a loud blowing systolic murmur was heard over the mitral area. The total count at this time was 800 white cells per cu. m.m. with 4 per cent polys. Transfusions were repeated on the 12th and 14th of December and X-ray therapy on the 13th and 15th, the femora being irradiated with the same dose as was used above. On December 15th, ten days after admission, the left ear became painful, and the same picture presented itself upon examination. The drum was opened, with relief of pain. Both ears discharged copiously.

Five hundred c.c. of blood were given by transfusion on the 16th and 18th, respectively. X-ray therapy was repeated on the 15th and 17th, and at this time a phenomenon of drop in temperature was noted, following which the blood picture began to improve. The chart for the week of December 12th appears as Table I. On December 15th the patient was taken to the X-ray room with a temperature of 103, and, upon return after irradiation of the chest and arms, the temperature was 98. The pulse dropped from 120 to 80. The patient did not appear to be shocked. The temperature soon returned to its former level and in eight hours was 104.6. The next morning the total white count had increased slightly. On December 17th, twelve days after admission, the X-ray therapy was repeated with a similar reaction, the temperature dropping from 102 to 98. The pulse did not change after this treatment. No effect on the patient's general condition was noted. The following eight hours found the temperature returning to 103. The next morning the total count had started to climb, reaching 1,250 white cells per cu. m.m. The granulocytes had increased from 16 per cent at the time of the first reaction to 60 per cent after the second reaction. From this time on, the white count increased at the rate of about 400 cells each twenty-four hours until, on December 28th, the count was 7,216 cells per cu. m.m., with 79 per cent polys.

On December 11th and 13th, respectively, 10 c.c. of leucocyte extract were given intramuscularly.

The patient was given one-half ounce of liver extract (Valentine) each four hours from the first day. This was supplemented with Blaud's pills three times a day. The red count responded well to this therapy.

By December 19th the angina had disappeared and the wound in the inguinal region began to soften and slough. The herpetic scab on the under lip separated and was removed on December 27th. The heart murmur disappeared. The ears continued to drain, but less freely.

The patient was sitting up in a wheel chair on December 27th, twenty-two days after his admission to the hospital. His blood count at this time was 6,424 white cells per cu. m. m., 77 per cent polys., 19 per cent small lymphocytes, 3 per cent large lymphocytes, 4,100,000 red cells, and 80 per cent haemoglobin.

From December 28th to January 1st the patient continued to improve, the temperature, pulse and respiration remaining at normal.

The patient complained of pain in the left chest on December 29th, but physical examination revealed the chest to be clear and the pain was not associated with respiration. When the patient sat up the pain disappeared. On January 1, 1931, the patient was free from this pain, and felt as well as he had ever felt. The ears continued to drain a slight amount of purulent material. The inguinal wound had granulated and looked clean and healthy. The blood picture had apparently reached its normal level at 6,800, with 74 per cent polys., and had been at around that figure for over a week.

On January 4, 1931, the patient was discharged from the hospital with the laboratory and clinical evidences of recovery. The blood count on the day of discharge was 4,180,000 red cells, 80 per cent haemoglobin, 7,680 white cells, with 73 per cent polys., 20 per cent small lymphocytes, 6 per cent large lymphocytes, and 1 per cent eosinophils. Clinically, the patient was in good shape. He was walking unaided, the ear discharge had ceased, and the wound was granulating even with the skin.

In addition to the transfusions, X-ray therapy, and leukocyte extract, liver extract (Valentine) and Blaud's pills were used to combat the secondary anemia.

Pathological Report on Excised Gland

The tissue is a gland about one inch in length and one-half inch in diameter. It is soft and necrotic. Microscopical section of the tissue shows it to be crowded with endothelial cells. There is practically no stroma in the center of the section and that at the periphery is infiltrated with endothelial cells. There are many large cells with two or three nuclei. There are scattered endothelial giant cells answering to the description of those found and described by Dorothy Reed. The endothelial cells seem to run in islands. No eosinophils are seen.

Pathological Diagnosis: — Hyperplastic adenitis.

Blood Cultures:

12/13/30 Negative.

12/15/30 Negative.

Culture for ear grew the pneumococcus.

Urinalysis:—December 5, 1930—Clear, amber, specific gravity 1.018, acid. Albumin—faint trace. Sugar—negative. Few hyaline and granular casts.

December 6, 1930—Same as above.

Laboratory Reports

Table II.

Date	R. B. C.	W. B. C.	Hg.	P.	L. L.	S. L.
12/ 5/30	--------	9,600	--	3	7	89
12/ 6/30	2,690,000	6,200	50	3	12	85
12/ 7/30	3,160,000	1,350	55	2	8	90
12/ 8/30	2,490,000	866	48	4	2	94
12/ 9/30	2,920,000	825	57	1	6	93
12/10/30	2,890,000	776	50	5	3	91
12/11/30	2,930,000	1,850	52	11	7	82
4 P. M.	--------	2,400	--	10	6	78
12/12/30	3,050,000	800	50	11	6	82
12/13/30	3,360,000	418	62	4	4	88
12/14/30	3,140,000	466	60	16	6	78
12/15/30	3,330,000	425	57	32	4	64
12/16/30	3,080,000	550	56	32	4	64
12/17/30	3,380,000	1,083	60	48	2	50
12/18/30	3,510,000	1,250	66	60	5	35
12/19/30	3,840,000	1,666	69	62	4	34
12/20/30	4,000,000	2,518	75	65	8	27
12/21/30	4,120,000	3,000	79	63	4	33
12/22/30	3,450,000	2,700	65	62	16	22
P. M.	3,490,000	3,000	67	64	19	17
12/23/30	3,930,000	3,666	70	61	12	27
12/24/30	4,050,000	4,400	80	65	13	22
12/25/30	4,040,000	4,800	79	69	4	27
12/26/30	4,100,000	5,200	80	69	5	26
12/27/30	4,070,000	6,421	80	77	3	19
12/28/30	4,150,000	7,216	82	77	7	16
12/29/30	4,240,000	6,666	82	72	3	25
12/30/30	4,180,000	6,718	80	70	8	22
12/31/30	4,100,000	6,700	80	71	5	24
1/ 1/31	4,120,000	6,800	81	74	8	17
1/ 2/31	4,180,000	6,900	80	74	8	18
1/ 3/31	--------	6,200	--	68	6	24
1/ 4/31	4,180,000	7,680	80	73	6	20

Detailed Account of Blood Study

From December 5, 1930, to December 17, 1930, the blood picture presented many abnormal and early forms. The early counts during this period exhibited many nucleated red cells. The white cells, mainly lymphocytes at this time, presented some of the reticulation of the nucleus similar to that seen with supravital staining in infectious mononucleosis. The few granulocytes seen were early forms taking deep stains immediately upon contact with the reagents. From December 17th, the cells showed a beginning return to normal. The nucleated reds disappeared. The granulocytes increased in number and resumed the normal

staining characteristics ordinarily seen. The lymphocytes lost the reticulation of the nuclei and decreased in number. The change in blood picture seemed to begin following the marked antipyretic reaction after X-ray, which is described in detail elsewhere in this paper.

The patient was seen daily at home for a week and then came to the office each day. Blood counts taken every other day were normal each time.

On January 18, 1931, I was called to see the patient in the late afternoon. He was complaining of agonizing pain in his wrists and elbows, and the area over these regions was tender to pressure. The blood picture the day before had been normal. I took blood, however, for a count on this visit, and found a total count of 21,000 white cells. The differential count revealed 50 per cent polys., 32 per cent small lymphs., 9 per cent large lymphs., 7 per cent eosin, and 4 per cent myelocytes. The temperature at this time was 101.4. The patient was sent to the hospital the same night.

Physical examination on this admission was as follows: Head and neck—cheeks puffed and red; sclera—injected; tongue—coated; glands—slight general adenopathy; chest—lungs—clear; heart—negative; abdomen—liver 3 cm. below costal margin, borders smooth; spleen—enlarged to 3 cm. above umbilicus; inguinal wound healed; extremities—three haemorrhagic spots over left tibia.

Progress of Case:—The temperature ranged from 101.4 on admission to 102.6—the highest level it reached. The pulse ranged from 100 to 160. The respirations ranged from 20 to over 50.

On January 20th, the spleen had increased in size to 1 cm. below the umbilicus. On January 21st, a macular rash appeared over the entire body and face. On January 27th it was noted that "Pain has continued in wrists and elbows since admission, and is worse today."

On January 30th, pain shifted to fingers of both hands. Rales of a begining pneumonia were present in both bases February 3rd, and the alae nasi were dilated. Respirations became more labored February 4th, and patient died at 10:15 A. M.

The skin was covered with petechial haemorrhages at the time of death, and the spleen was occupying the entire left abdomen and pelvis. Table III presents the blood pictures of this stage.

Table III

LABORATORY REPORT OF SECOND STAGE

Date	Red	Whites	Polys	S. L.	L. L.	Eosin.	Myelo.
1/18/31	--------	41,200	53	31	9	7	4
1/19/31—							
A. M.	--------	39,750	25	40	16	7	12
P. M.	4,570,000	58,300	25	43	22	4	6
1/20/31	--------	37,700	39	33	15	10	3
1/21/31	--------	41,000	36	30	17	0	17
1/22/31	--------	48,400	26	45	18	1	10
1/23/31	--------	61,200	14	46	16	0	24
1/24/31	--------	75,000	12	61	12	6	9
1/25/31	--------	77,000	11	43	22	1	23
1/26/31	--------	37,000	8	62	17	0	13
1/27/31	--------	36,900	21	56	16	7	0
1/28/31	--------	58,600	16	57	20	0	12
1/29/31	--------	74,400	9	59	20	0	12
1/30/31	--------	59,800	7	65	18	0	10
1/31/31	--------	41,800	8	70	14	0	8
2/ 1/31	--------	46,300	5	55	27	0	3
2/ 2/31	--------	77,000	10	62	21	0	7
2/ 3/31	--------	75,800	2	73	21	0	4

COMMENT ON CASE

This case is of interest because in its first stage the picture was that of agranulocytosis and the author was convinced that this was the condition under observation. When the case left the hospital the writer believed he had witnessed one of the rare recoveries from this dread disease. This belief was short lived. The leukemia ensued in two weeks and terminated in death.

The leukemia was myeloid in type even though the lymphocytes were in greatest percentage. The presence of fairly large numbers of myelocytes and the eosinophilia, I believe, establishes that point. The total count did not reach the tremendous numbers sometimes seen, but was high enough to be in the class of the leukemias.

The case is of further interest because of the reaction to X-ray therapy in the first stage.

70 *Thirty-Third Street.*

ON THE USE OF INSTRUMENTS OF PRECISION IN THE DIAGNOSIS OF HEART DISEASE.*

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In the opening chapter of his *magnum opus* on the "Facts on the Heart," Richard Cabot speaks as follows: "The first and in some ways the most important point of all is to know that

*Read before the Norfolk County Medical Society, October 19, 1931.

most 'heart disease' is imaginary," and he adds a footnote in the summary of the book: "Most diagnoses of heart disease, whether made by physicians or suspected by the patient, are in my experience wrong." Such, indeed, is the indictment made by a famous diagnostician, a "foeman worthy of his steel." That this indictment is surprising, no one will deny; that it contains a deal of truth, we must all admit.

We must, first of all, admit an ignorance of the heart. In spite of our boasted progress and education, few of the laity know the heart save as the seat of the passions. We pray for an "understanding heart," for delivery from "hardness of heart," for a "loving heart," etc. Few, indeed, recognize that the heart is an organ of circulation; that it is owing to its continuous functioning that the blood nourishes the tissues, so that we may live and thrive. Just now it is quite fashionable to have "heart trouble," and, just as charity covers a multitude of sins, so supposed heart disease relieves us of performing many tasks that we do not desire. Most people now have a vague idea that the heart lies somewhere in the lower left chest; but this has been only in recent years. In spite of the long continued disemboweling of corpses as a part of the process of embalming, as practiced by the Egyptians and extending almost to the present day in the case of kings and popes, and of the wish of great warriors, statesmen and cardinals that their hearts repose at places distinctly separate from the tombs that contained their remains, the idea arose that the heart was on the right side. Thus, when we observe the wax figures of the Christ with the spear-wound on the right side, which repose on silken pillows in glass boxes as the lower portions of altars in many churches, we are prepared for almost any anatomical absurdity. But we are more than astonished when we see this same error in that greatest of all sculptures of the Christ, the marble crucifix by Cellini at the Escorial.

And this ignorance also applies to the medical man. If one will search the history of medicine, he will observe that many and strange doctrines have been taught regarding the circulation of the blood, of the arteries and of the veins. It is only since the time of Harvey that we have entertained a clear conception of the subject. It is only the man who is constantly associated with the anatomy of the human body (and especially of the heart) that can define its true relations and borders. After leaving college we promptly forget what anatomy we have learned; likewise, with the physiology and pathology of the organ. Now, as the clinician must serve as a clearing-house not only for the truths of anatomy, physiology and pathology, but also for the symptomatology of his patient, he must be acquainted with all of the facts. Cabot shines by no internal light. He freely tells us that it is only by the co-operation of his confreres that his work has been made possible.

To this admission of ignorance both upon the part of the laity and the profession we must add an insufficient experience with the art of physical diagnosis. When Auenbrugger announced his method of percussion, he gave to the profession a method of examination that has endured. Yet every examiner has his own distinctive method. Some percuss with the hand, some with the hammer, some with the pleximeter—some deeply, some lightly. Some vary their technique to suit the case. Personal equation also enters in. So that the percussion of the heart represents a degree of skill not easily attainable and it is doubtful whether any two men would percuss exactly the same lines, if they were given the same patient to examine. Frankly, I must admit that I know only one man who I think can percuss a heart. Then, too, Laennec's studies opened up another series of discussion when he gave to the prefession the art of auscultation. Few of us have perfect hearing. Few of us can correctly interpret all of the variations of pitch and volume and the other characteristics of the note, so beautifully discussed by musicians; few of us can translate them into the underlying physiology or pathology.

But, to my mind, this fault is not due so much to the individual as to the inherent difficulty of the subject. There is a certain inherent difficulty in percussion. If the heart was closely associated anatomically with the chest-wall, we should get a pure note when we percuss and we should feel that the boundaries as outlined were indeed the true borders of the heart. This, however, is not so. It is only at certain portions of its surface that the heart lies in contact with the chest-wall. It is an organ with many curves. If percussion alone is followed, we must often overlook an aortitis or aneurism, as it is only in the last stages of

the disease that the arch approaches the sternum or chest wall. Upon one occasion I visited a famous night cardiac clinic in New York and was invited to make my choice between the male or female "rheumatics, syphilitics and fibrillators." I chose the male rheumatics. I found a very able and gentlemanly medical man in charge. He showed me a very interesting case and a teleroentgenogram. This he opined was wrong, as his percussion note did not agree with the shadow as observed on the plate. I tried my own hand at percussion. Some how or other my percussion agreed very nearly with the outlines as revealed upon the plate. He tried again and confessed his error.

But, if the percussion note as heard by the ear, or the resonance as felt by the examining finger, is difficult to translate into terms of the size of the heart, what must be the difficulties associated with auscultation? Until a few years ago our clinicians taught (and our textbooks reiterated) that there were two heart sounds, with variations, of course, pre- and post-. Now we are taught that there are three heart sounds. Has Nature in the meanwhile made different hearts or different ears? Is there some super-sense of hearing that is denied to most of us? Moreover, we now recognize that there are many murmurs of no pathological import and that when the diagnosis must rest upon fine gradations of sound we are surely treading upon slippery ground. These gradations of sound and murmurs the clinicians now tell us must be correlated with the physical findings. Thus the relative difficulty of auscultation is at once apparent.

Then, too, an element of haste often appears. We are sometimes so much absorbed by other matters or so fatigued that we do not give the requisite amount of study to the individual patient. "More mistakes are made by not observing than by not knowing" is an observation of Jenner. These words are words of wisdom and worthy to be written in gold. They explain many of the failures in the diagnosis of heart lesions.

And, lastly, we are confronted with a certain amount of conceit. "All fatal faults in art," says Ruskin, "that might have been otherwise good, arise from one or another of these three things: either from the pretence to feel what we do not; the indolence in exercises necessary to obtain the power of expressing the truth; or the presumptuous insistence upon, and indulgence in, our own powers and delights, and with no care or wish that they should be useful to other people, so only they be admired by them." While, presumably, these words were written in regard to art as we know it in painting and sculpture, they apply with equal force to the art of the practice of medicine. We are all familiar with the clinician who will brook no interference with his diagnosis. We are equally familiar with the loquacious surgeon who operates in a large amphitheatre,—

"The applause of listening students to command."

I think that it will readily be admitted that the dawn of civilization began with the use of standards of measurement. The Book of Genesis records that even in Creation the day was divided into the morning and the evening. Later there arose the use of a calendar and the lives of the patriarchs are recorded in units of time. Likewise, there was an arbitrary measurement of length. The dimensions of the ark of Noah are given in cubits. Nor will it be denied that the use of instruments of observation ushered in the beginning of scientific accuracy. Probably the first attempt to ascertain the length of the time of the Sun's journey around the ecliptic began with the Egyptians. Whatever the rites or mysteries as practiced in the temples, the use of the gnomon is perhaps the first attempt to determine the meaning of the solar year.

From the arbitrary division of the day into the morning and the evening, the attempt to measure the solar year by the use of the length of the shadow as thrown by the gnomon and the adoption of the cubit as the unit of dimension, what an epoch to the use of the pendulum, the transit instrument and the micrometer! What an evolution we now enjoy with our accurate clocks and chronometers, our balances, our metric system and the other methods of scientific measurement! Likewise, what a difference in the measurement of the sensation of heat by the thermometer, our steam pressure gauges, our ammeters and the thousand and one other aids to measurement and accurate record! But it must be noted that all these are instruments, in which the sight is utilized. The expansion of mercury is measured in length as a determination of the degree of heat. The pressure of steam is registered upon a gauge, the quantity or intensity of the electric current upon a dial. These instruments, as we have said, are calibrated into units, which are

seen. Further, we must confess that, while to the accurate balance is due the foundation of modern chemistry, the chemical reactions are reactions, which are interpreted by the eye. Color, cloudiness, precipitation, character of crystals, etc., these are changes that must be seen, not heard, nor smelled, nor felt.

Further argument would seem unnecessary to show that of all of our senses sight is the one upon which we must depend, and, conversely, that of all of our senses sight is the most perfect. The use of instruments of precision and the accurate record of what is observed has, so far as is humanly possible, eliminated the problem of personal equation. Such, indeed, is the testimony of the sciences. With art, however, the personal equation largely enters. But, even in music, we have the reduction of the note to a scale and a recording in symbols that are interpreted by the eye. Some of the greatest of our musical compositions are the work of a man who had become deaf. But what of the senses of taste and feeling? Alas, these are personal relations! And so it is also of smell. It is only by the cultivation of years that the exquisite sense of taste necessary to grade tea and wines may be acquired or the exquisite smell so necessary in the blending of perfume. I think that I may indeed make this differentiation. Science depends upon the sense of sight and evades the personal equation; art is dependent upon the other senses and cultivates the personal equation.

And so it is with the science and art of medicine. The truths of anatomy must be acquired by the cultivation of the sight. No blind man may appreciate its many details. Similarly with the fundamental truths of chemistry, physiology, pathology and materia medica. While theory enters, and must necessarily do so, it is upon observations made with the test tube and other instruments of precision that we must depend in the final analysis. All of the clinical reactions, as we have said above, as well as the chemical ones, color, precipitation, cloudiness, these depend solely upon the sight. Instruments of precision are not wanting. The accurate watch to test the pulse, the clinical thermometer, the microscope, the sphygmomanometer, the roentgen rays. When, however, we view medicine as an art, we must depend upon methods other than those connected with or interpreted by the eye—hence percussion, auscultation, smelling, feeling. All of these have a varying personal equation and recorded phenomena must necessarily vary according to the examiner. Fortunately, the use of instruments of precision is growing all of the time. Unfortunately, there is always the appeal that medicine is becoming too mechanical. But, if a mechanical contrivance will do better work than the man, who has had years of experience, why not let him devote himself to something beyond the capacity of the machine? Once upon a time the urine in hospitals was examined entirely by interns; they also gave anaesthetics. Now it is recognized that this work may be done equally well by the trained nurse. The educated man can devote himself to something better and higher.

There is a certain inherent ultra-conservatism that still clings to many of our medical men. They seem to think that the adoption of an instrument of precision will deprive them of some tangible asset. At the meeting of the Medical Society of Virginia in 1903, the first that I attended after my graduation, Dr. Henry Wireman Cook, of Richmond, presented a paper upon the accurate estimation of blood pressure and a description of his own modification of the Riva-Rocci instrument. In the discussion, which followed, it was almost the unanimous opinion that the instrument described by Dr. Cook was an interesting laboratory toy, but that the real estimate of blood pressure lay in the educated touch. In the very early days of roentgenology a disgusted roentgenologist complained that many of the orthopedists would have none of the roentgen examination in regard to broken bones; that seemingly they were indifferent as to the results of their own reductions. Only a little later our State Medical Society held a symposium on tuberculosis. The roentgen examination of the chest was declared of no value. It is only fair to the author of the paper, however, to note that this was before the days of the studies of Dunham and Cole. But instruments of precision will prosper and develop. Dr. William J. Mayo addressed the meeting of the American Roentgen Ray Society held at Rochester and Minneapolis in 1920. He thanked the members for what they had done, declaring that sight was the most perfect of the senses, and referred with much feeling to the "romance of the chest."

Just why this ultra-conservatism should exist in the mind of the cardiologist in regard to

the adoption of the use of the roentgen ray, I am unable to say. It was only in 1929, at the meeting of the American Roentgen Ray Society in New York, that a distinguished cardiologist appeared as one of the speakers in a symposium on the roentgen diagnosis of heart lesions and declared that, while he expected to purchase a roentgen apparatus for his own use, the work of the roentgenologists had been of no special value to him. Again, time and common sense have compelled a change of opinion. It is interesting to note that in the latest work on cardiology which has appeared (I refer to that by Paul D. White), the inherent difficulties of percussion are recognized and a large portion of the book is devoted to the roentgenology of the heart.

As White's book represents the latest and best that is known and thought upon the subject of heart disease, a careful analysis of his chapter upon the roentgen examination will not be out of place. He has become, as it were, converted to the Continental or Viennese school of roentgenology. Hence he employs the fluoroscope and the orthodiagram. The tracing upon the paper is carefully analyzed. Of this method much can well be said. It cultivates the powers of observation; it preserves and correctly records certain of the landmarks of the heart; it is inexpensive, though time consuming. It, however, intensifies all of the faults of personal equation. Frankly, I must tell you that in my own opinion the American roentgenologists will not adopt it. They will continue to use the fluoroscope and to examine the patient at all angles; but the perfection of the intensifying screen, the tremendous increase in the capacity of the transformers and tubes and the almost complete elimination of motion will produce a permanent record free from mechanical errors, distortion and personal equation. The exceedingly quick time, in which the roentgenogram is made from a distance of two metres or more, eliminates the pulsation of the organ and the diffraction incident to the tube at a nearer distance.

I am frankly cognizant that of the three methods of heart examination, viz., the clinical, the electro-cardiographic and the roentgen, the roentgen method is of the least value. Yet I would make a plea for a roentgen examination in every case that is at all suspicious. The shape, size and position of the heart, the great vessels, the arch and the descending aorta are clearly shown. These can be checked against clinical examination. An enlargement of the heart to the right together with an unusual enlargement to the left suggests a mitral regurgitation, or, if associated with a "stair step" on the left, a mitral stenosis; an aneurism of the left ventricle must not be overlooked. Similarly, a very great enlargement of the heart to the left may spell aortic disease. We must also consider the width of the arch and of the descending aorta. In other words, the teleroentgenogram and the fluoroscopic examination should be used to check and elucidate as many equivocal points as possible.

The clinician has always felt that the educated touch was most essential in the examination of the pulse. Careful observation has developed a number of interesting facts. But, even as the sphygmomanometer has been routinely adopted as the measure for blood pressure, so some have felt that there was something eminently to be desired that the palpation of the radial artery did not reveal. The sphygmograph did not entirely satisfy. When, however, Mackenzie added the simultaneous tracing of the jugular pulse, he at once opened up a new world. He was able to establish as facts many things that he had long suspected. A little later Einthoven gave us the electrocardiograph. Here we have a machine that records the movement and mechanism of the heart beat in a graphic way. It is a great improvement upon the polygraph of Mackenzie, for, while that instrument records both the venous and arterial pulses, the interpretation is not always an easy one. With the electrocardiograph, on the other hand, we have a tracing that is clear, and it has opened up a greater and more useful method for the accurate study of the cardiac arrhythmias.

It may be stated that the electrocardiographic tracing will serve to bring to our attention many things that might have been overlooked in the usual clinical observation, and thus make us doubly observant. Thus the so-called left ventricular preponderance will at once suggest that we pay particular attention to the examination of the aortic valve. Similarly, a right ventricular preponderance suggests some trouble with the mitral valve. A recent letter from the medical director of one of our largest life insurance companies assured me that he could not pass as a first-class risk an applicant on account of a right ven-

tricular preponderance, although the teleroentgenogram was distinctly normal and no murmur could be heard at the apex. This, perhaps, is going a little too far, but it serves to guide us in the right way. Similarly, the reversal of certain of the waves and the strength of others must serve as a guide to the integrity of the cardiac muscle. The great cardiologists at once seized upon this method of examination, and it is now almost impossible to attend a heart clinic without an exhibition and discussion of the various waves and phases of the electrocardiogram.

To discuss the electrocardiogram in all of its phases will lead me far afield from the purpose of this paper. Suffice it to say that in my own experience it has been an instrument of constant information. I have had the privilege of making the records of many patients. Thus, Mrs. A., whose husband is a medical man, suffered with an arrhythmia, which both were convinced was a heart block. An electrocardiographic tracing showed only a series of extra-systoles. I have also had the opportunity of examining several patients, who have died suddenly. In one the observation of a pulsus alternans told the story a year before the crisis. In another the reversal of the T-wave in the first lead combined with an exceedingly low voltage caused me to render an opinion that coronary disease was present, only to hear a few hours later that the patient had suddenly passed away.

To the instruments of precision, which we have discussed, viz., the blood pressure machine or sphygmomanometer, the roentgen ray, the polygraph and the electrocardiograph, we must add the apparatus used in the determination of the basal metabolic rate. Levine has given us to understand in no uncertain language that there is an intrinsic relation between the thyroid and the heart and that the question of a too rapid heart beat can only be definitely determined by this means. If the basal metabolic rate is normal, we must suspect something else and so postpone indefinitely a thyroidectomy or treatment by the roentgen rays or radium. Nor should we overlook that homely instrument of precision, the tape-measure, nor the more intricate spirometer. The one is used too little, though it serves as a measure of physical fitness; it gives the amount of expansion of the chest and in some degree measures the respiratory quotient. The other guides us to the capacity of the respiration. Both guide us as a measure of the tone of the muscles of respiration and, conversely, those of the heart.

To the instruments of precision, which we have discussed above, the roentgen ray, the sphygmomanometer, the sphygmograph and polygraph, the electrocardiograph, the tape-measure, the spirometer and the determination of the basal metabolic rate, we must add yet another instrument, namely, the stethoscope. From the instruments that appeal to the sight and record observed phenomena in units, we pass to one that depends exclusively upon the sense of hearing. Here, indeed, begins the stumbling block, so to speak, in modern cardiology. The sounds are transmitted either pure or intensified by some form of a diaphragm to our ears, and it depends upon a cultivated sense of hearing that the diagnosis of murmurs is made. It is upon personal contact, long training and a nicety of discrimination that we are forced to depend. We must all learn this for ourselves. The electrical stethoscope, whereby the sounds are transmitted to several listeners, is indeed a boon. The sounds, while somewhat intensified, are usually distinctly heard. But the attempt to record the murmurs or other cardiac sounds upon Victrola or other disks, as in the case of musical notes, is most unsatisfactory; likewise, the attempt so to intensify these sounds by vacuum tubes that they may be broadcast. To say the least, both are failures. Unfortunately, also, no one has been able to translate the note as heard by the ear into a series of recorded symbols and thus differentiate and determine once for all the question of pre- or post-systolic or diastolic mrumurs, third sounds, etc., so that the cultivated ear will always be the medium of interpretation, so far as murmurs or sounds are concerned. No wonder, Mackenzie is often quoted as saying that the stethoscope was an instrument of the devil.

The field of accurate cardiac diagnosis is a large one. Hence I would appeal for a more general use of the instruments of precision and the co-ordination of observed physical symptoms. The teleroentgenogram or fluoroscopic examination will serve to check errors of percussion; the shape and size of the heart as observed upon the screen and plate will tend most distinctly to determine whether the murmur as heard is pathological or not. As a

member of one of our medical advisory boards during the World War, before accepting a commission in the Army, I had the opportunity of listening to many apical systolic murmurs. Under the instructions from Washington there was no choice but to reject such men. A little later we found our error. Subsequently, the rule was adopted by many of the better cardiologists that if there was no history of rheumatism and the heart shadow was normal both to percussion and on the roentgen plate, an apical systolic murmur was of no consequence. To this dictum, however, the late Garnett Nelson strenuously objected. White in his new book begs the question. This I have cited only as one place where we may be led astray. I might continue almost indefinitely. Theoretically it is even possible to have grave valvular disease without any murmur. I would repeat that we must check and re-check ourselves by a co-ordination of the records as determined by instruments of precision and observed symptoms.

But the cynic objects. Would you reduce a man to a system of units? Would you make difficult a thing ordinarily very easy? Would you increase an examination fee from one of pence to one of pounds? Percussion, auscultation, palpation of the pulse, and all of the other methods that the great clinicians have given us, are well tried and have stood the test of time. They are eminently to be relied on. And, more, if they should vary in their results from some of your own units, what is the difference? If the heart is sound, it is sound. And, again, he asks: Of what use is all of this? I have the hearts of my patients examined, but only as a matter of protection to myself. There is a certain appearance, an intuition as it were, by which I know whether my patient will recover from a surgical operation. I use my own discretion and my own common sense. And, then, what will you do? Will you go on drugging your patients with digitalis and digitalis and still more digitalis? And, then, what? Would you deprive the Moon of her glory by disclosing that she shines only by reflected light? Would you reduce man, the noblest of all creatures, or your own intellect, to a system of units and measures?

For my own part, I have no inner light. I have no supersense. I have had to acquire what I know by study, hard knocks and observation. I would check histories and observed clinical phenomena by all means at my disposal, and so, knowing what these things reveal, I would be in a position to give better advice. If instruments of accuracy and precision are used and our observations completely checked, I think that it is only a short time when Cabot will be glad to delete from his work the statement that "most diagnoses of heart disease, whether made by physicians or suspected by the patient, are in my experience wrong."

"To thine own self be true
And it should follow, as the night the day,
Thou cans't not then be false to any man."

THE TEACHING OF PRENATAL AND POSTNATAL CARE.*

GREER BAUGHMAN, M. D., F. A. C. S., Richmond, Va.

It seems to be a rather well established fact that prenatal care intelligently carried out will result in a reduction of the mortality and morbidity among mothers and their newly born babies.

Postnatal care picks up pathology or tendencies in mothers and babies as a result of pregnancy, and labor and puts us in the position to relieve what may be wrong.

Manifestly, departures from the normal must be discovered before they can be corrected. A good way to prevent trouble is to look for it before it looks for you.

Prenatal and postnatal care are wide and inclusive subjects. The examinations, instructions, etc., might easily be so complicated that the average doctor without a well-equipped hospital and laboratory would be helpless to carry them out.

There is, however, a minimum standard, that is in most instances all sufficient, that can be carried out by any doctor who is equipped with an examining table, suitable light and a few instruments.

I will outline what seems to me to be a minimum standard:

1. Taking a history, family, personal and obstetrical.

2. Measuring the pelvis with the pelvimeter, or, with the trained hand, making a careful internal examination of the pelvis associated with a speculum examination.

3. Taking blood for a Wassermann, and

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taking smears from the cervix and urethra for gonorrhea, when necessary.

4. Physical examination, chest, heart, abdomen, etc., including height and weight.

5. Mapping out the foetus for position, size, fit of the presenting part in the pelvis, and heart sounds. If the foetus is too small to map out, the size of the uterus can be measured.

6. Urinalysis, preferably a catheterized specimen to get rid of the vaginal pus and albumen.

7. Discussing with her the necessity of a dental examination.

8. Giving her advice about food, clothing, bowels, exercise, mental care, care of abdomen, breasts, etc., instructing her about her needs for delivery, and, finally, giving her a prognosis of herself and baby.

9. Giving her literature about her pregnancy, and instructing her when to return.

10. Finally, directing attention to and suggesting treatment for any departure from the normal.

The minimum standard for postnatal care is as follows:

1. History of delivery.
2. Report of her symptoms since delivery.
3. Record of her weight and general physical condition when necessary.
4. Examination of breast and nipples, abdomen, particularly the condition of the skin, muscles, fascia, looking particularly for tendencies to ptosis and movable kidneys.
5. Inspection of the perineum and anus, bimanual examination of the vagina and pelvic contents, note being taken of the descent of the uterus, inflammatory masses, position and size of the uterus, injuries to the coccyx, the ischial spines, the perineum.
6. Speculum examination to see the condition of the vagina and cervix.
7. The examination of the baby is a report of its departure from the normal in its breasts, mouth, abdomen, navel, hernia rings, etc.
8. General instruction to mother about diet, bathing, breast, nursing, exercise, particularly exercises directed to strengthen the abdominal muscles, sexual life, etc.
9. Instruction to return for treatment provided any departure from the normal be discovered.

When we come to study the subject of prenatal and postnatal care from a teaching standpoint, it seems to divide itself into two problems—the need and the technic.

The need should be thoroughly understood by the doctor. If he feels the need, in many instances he feels the need very slightly because he does not put the need into practice. The doctors should be the leaders in this great movement for the conservation of life and health. If they are not willing to lead, then they must follow, because the laity are becoming conversant with the modern trend and will demand better care.

The technic must originate with the doctors, because they are the ones qualified by training to carry out the technic.

Leaving the part played by the nurse out of discussion at this time, there are two very well-defined groups to be taught—the undergraduates, and the graduates in medicine.

The junior medical student at the Medical College of Virginia has completed his courses in anatomy, physiology, bacteriology, biochemistry, pathology, physical diagnosis, pharmacology, principles of surgery, histology and embryology. During this third year he is paralleling his obstetrics with gynecology, medicine, nervous and mental diseases, pediatrics, preventive medicine, X-ray, and carrying on with special pathology and physical diagnosis, for which reason he is pretty well prepared to understand the underlying principles of prenatal and postnatal care.

The theory of prenatal and postnatal care are discussed in the junior year, but the practical application is reached in the senior year, when the student examines and instructs pregnant women in the dispensary. At the same time he is aiding in the delivery of women in the hospital and on the outside service.

We are suffering in the dispensary with a plethora of students. The students who get their obstetrics off in the summer months are better instructed because we have fewer students and are able to give them better instruction. These comprise about a third of the class. The graduates who intern at the Memorial Hospital and have three months of obstetrics are well versed in prenatal and postnatal care because they, during their three months' service, are used as demonstrators in the dispensary under instruction.

The instruction of the graduates, particularly those who graduated several years ago before the instruction in the dispensary was

as efficient as it is today, is even more of a problem.

The graduate has been repeatedly invited to attend the clinic work in the dispensary, but he has seldom availed himself of his opportunities. Probably he knows that the dispensary is crowded; possibly he lacks the time except where post-graduate instruction is really organized. The approach through papers and demonstrations at the Medical Society of Virginia and before the local medical society has been tried and is no doubt helpful. What he really needs is to have someone go directly to him, persuade him of the need, show him how he may in this way not only do good to the patient, but increase his own income, and give him a demonstration to show how easy the examinations are to make. A man cannot become an expert in a few hours, but he can become interested, learn the underlying principles, and make his plans to learn more.

The best way to carry out such a demonstration is to send a practical experienced clinician, who is not practicing and does not intend to practice in the State, with what clerical or nursing assistance he may need, to the doctors of the State who desire it, and to demonstrate upon their patients or upon charity cases of the neighborhood a suitable prenatal and postnatal technic to those doctors who want it.

A joint committee made up of equal representation from the Medical Society of Virginia, the University of Virginia, and the Medical College of Virginia, are working out plans to put such a team in the field.

It is believed that this plan will demonstrate to the doctors the ease with which prenatal and postnatal care may be given, will advertise the need to the laity, and will be the means of adding a considerable sum to the monthly income of the doctors.

The real reason is to reduce the mortality and the morbidity for mothers and babies, and make Virginia not only a good place to die, but a good place to be born.

26 *North Laurel Street.*

TWO UNUSUAL TYPES OF FISTULA—WITH CASE REPORTS.

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These cases are reported owing to their comparative rarity, as few such cases have appeared in the literature of recent years. In those patients giving previous history of difficult labors or gastro-intestinal symptoms, such as fever, nausea and vomiting, abdominal pain followed by urinary symptoms, as frequent burning urination, with abnormal contents of pus, gas and fecal material, should lead us to suspect fistula.

The two cases which came under my observation were:

1. One in which the appendix eroded into the urinary bladder (appendiceal-vesico fistula).
2. One in which the small intestine eroded into the cavity of the uterus (entero-utero fistula).

The symptoms of fistula are varied, and usually the progress of the disease is slow and insidious. These conditions do not occur with great frequency in our day because of the wonderful advancement in surgical skill and diagnosis.

Case Reports

First Patient.—Appendico-vesical Fistula: Foreign bodies are today considered to be an infrequent cause of appendicitis although some years ago seeds and the pits of small fruit were thought to lodge frequently in the appendix and to be responsible for an attack of appendicitis. A survey of the literature (Mitchell, Fowler and Berger) shows that approximately 2 to 3 per cent of all cases of appendicitis are caused by true foreign bodies. Mahoney reports a series of seventy-four cases in which foreign bodies were the cause of appendicitis. In forty of these cases the appendicitis was due to the presence of sharp instruments (pins), and the mortality in thirty-eight was 55.2 per cent. In the majority of these cases the appendicitis occurred in childhood, and no history of swallowing the pin could be obtained.

Keen reports the case of a man aged twenty-four who had suffered from dysuria since the age of seven years. At the onset of the dysuria the family doctor found a pin in the urethra and removed it. The patient stated that he did not insert the pin into the penis, nor did he remember swallowing it. At the age of twenty-three he was thought to have a recto-vesical fistula secondary to the rupture of a prostatic abscess. Two unsuccessful attempts were made to close this fistula. One year later a laparotomy was performed and a long appendix was found, with its distal end incor-

porated into the bladder wall. The appendix was separated from the bladder and removed, and the patient made an uneventful recovery.

Lower and Farrell report a case of a man twenty-six years of age who for several years suffered with bladder irritation and who fell and dislodged a stone in the bladder which when removed from the bladder was found to contain a pin. Later a cystoscopic examination revealed an inflamed bladder and considerable amount of fecal material. A depression near the top suggested a fistula connecting with the bowel. At the time of operation the appendix which was found adherent to the domes of the bladder, was removed and the patient made an uneventful recovery.

A single woman, nineteen years of age, complained of an attack of pain in the right side, and had been having nausea for several days. She had also had difficulty in urination—frequency and burning. Her temperature, pulse and respiration were normal.

Past History: Negative, except one year ago she had an attack of pain in the right side, nausea, vomiting, chills, and fever, which lasted a week. She was sent to the hospital at this time, and, after ten days. her symptoms were relieved. Since then, she has had recurrent attacks, similar, but not sufficiently severe to send her to bed.

With this history in mind, an examination was made which revealed tenderness and rigidity in the right lower quadrant. There was no evidence of pain on percussion over the kidney area posteriorly. Laboratory report showed a leucocytosis of 10,000. Urinary findings revealed quantities of pus and cellular debris. It was thought that she had a surgical abdomen and a laparotomy was advised and accepted.

The operation revealed a tube-like mass of adhesions from the cecum to the fundus of the uterus, completely covered with peritoneum. A dissection of this revealed the appendix to be in close apposition to the right tube and entering the bladder at a point near the right cornua of the uterus. The appendix was removed and the bladder infolded. The abdomen was closed with a drain and the patient made an uneventful recovery.

The pathologist reported that the specimen consisted of a portion of the appendix which was adherent to and communicated with the bladder. At one end a surface was found to be lined by soft, velvety, irregular mucous membrane such as is seen in the bladder. The lumen of the appendix which ran through the rest of the mass, was open through its entirety.

Originally, I believe, this case was one of an appendiceal abscess, which fortunately attached itself to and ruptured into the bladder cavity.

Second Patient.—Entero-Utero Fistula: Several interesting cases have been reported in medical literature. The *American Journal of Obstetrics and Gynecology*, March, 1908, gives a report of a woman who was attended in confinement by a physician who ruptured the uterus with his obstetrical forceps, which caused a portion of the bowel to prolapse into the vagina and a section of this evidently sloughed off resulting in an entero-uterine fistula.

Another case was reported in *Gynecologie*, Paris, February, 1912, following a long, hard labor. The patient had a severe infection which required curettage, followed by intestino-utero, appendicular fistula. In still another paper, published in *Gynecologie*, Paris, February, 1921, it was stated the cecum and appendix became adherent to the uterus following an appendiceal abscess, resulting in an entero-uterine fistula. A case reported in the *Pennsylvania Medical Journal*, April, 1929, was that of a perforation from the small bowel into the uterus.

Communication of a bowel with the uterine cavity is not a common occurrence, and when the communication is not large it renders some difficulty in diagnosis. An X-ray examination of the intestinal tract in some cases demonstrates the fistula. The examination of the vaginal discharge, both macro- and microscopic, is often helpful. The passage of gas by the vagina, local inflammation of the uterus and vagina, which is worse if constipated or at the menstrual period, is sometimes suggestive. Previous history of difficult labor, abdominal operation or a severe illness with considerable abdominal distress, should suggest fistula.

The family history of this case was not remarkable. The personal history showed that the patient had had measles, mumps, typhoid fever and malaria. She had had five children, who are now between the ages of five and fourteen years and are living and well. She had one miscarriage seven years ago. During her last labor, five years ago, instruments were used

with considerable difficulty. Since that time she has been in poor health, complaining of backache, occipital headaches, general nervousness and vaginal discharge. The vaginal discharge was yellow, offensive in odor, and she suffered much more during her menstrual period with pain in the uterus, backache, itching and burning of the vagina, and at times she thought she noticed the passage of gas through the vagina. This condition did not respond to local treatment. Tenosynovitis developed in the right hand and wrist, and it was decided that the infection was of pelvic origin. An operation was recommended and accepted. The diagnosis at that time was chronic salpingitis and endometritis. Upon opening the abdomen many adhesions were encountered. The ileum, about two and one-half feet from its termination in the cecum, was found to be attached to the fundus of the uterus. By dissection, the bowel was separated from the uterus and the opening in the bowel repaired. The uterine opening was closed and the uterus delivered into the abdominal wound. There were cystic changes in both ovaries, and the tubes were inflamed and greatly enlarged. The tubes, ovaries, and the uterus were removed. The recovery was uneventful. The hand improved, and no further evidence of infection has been noted. For two years her general health has been excellent.

Much information could be collected in these types of cases by gastro-intestinal X-ray between the attacks, and cystoscopic examinations during or shortly after the attack often would give valuable information.

References

Ztschr. f. Urol. Chir., 20:215-21, 1926.
Bull. et mem. Soc. de med. et chir. de Bordeaux, 535-536, November 17, 1911.
Tr. Med. Chir. Soc., Georgia, 1905-1907.
Journal of Urology, 20:598-603 (November), 1928.

COLORED PHOTOGRAPHY OF THE ANTERIOR SEGMENT OF THE EYE.*

LeROY HYDE, M. D., Washington, D. C.

Recent advances in color photography have paved the way for improved medical illustration. In the past the sketches of an artist were at the best not exact, and the black and white photograph left a great deal to be desired as a means of preserving interesting medical data. Today the relatively simple process of color photography pictures in a wealth of detail and color value nearly any medical specimen which can be photographed. Every lesion of the exposed surfaces of the body, pathological specimens, and microscopic sections are depicted accurately and in their natural colors. As an aid to teaching, as well as a method of illustrating medical talks, its value cannot be questioned. Unfortunately, contact prints cannot now be made from these plates, although photoengraving methods reproduce these pictures with accuracy. Prints in colors can be made by a method of color separation and synthesis, but with this we have had no experience.

Our interest in photographing the anterior segment of the eye dates from 1929, when Dr. Laurence Redway published an article on the subject. Unaided by technical or other help, Mr. Frank Edmonds, of Washington, has developed the camera with which these pictures were taken. I want to express my deep gratitude to him for making these pictures possible.

Although several processes of color photography are available, we have used but one, the Agfa dye plate. In these plates there is interposed between the glass and the emulsion a fine color screen. When loaded in the camera the emulsion side of the plate is turned away from the lens so that during the exposure light rays pass in order through the glass, color screen, and register on the emulsion. When developed and projected, the light rays passing through the same color screen accurately register the color values of the subject.

Because of this color screen, these plates are only 1/30 as fast as ordinary plates, and therefore require intense light and long exposure. Daylight, the carbon arc, flashlight, or the nitrogen lamp may be used, but for this special work we have found the carbon arc best. Since some lights are richer in certain colors of the spectrum than others, it is necessary to use color filters to intensify the weaker and tone down the stronger colors. With all except the nitrogen lamps such filters are employed. Using 60 volts and 18 amperes from an ordinary commercial circuit of 110 volts direct current, it is possible to develop in excess of 75,000 foot candle power at the arc. By means of a plano-sphere lens the light is conducted to the eye in a nearly parallel beam. This beam is controlled by a camera shutter. With this intense light, exposure has been reduced

*Read before the Virginia Society of Oto-Laryngology and Ophthalmology, at Richmond, May 2, 1931.

to 1/25 of a second and without discomfort to the patient.

After exposure, these plates are developed in total darkness or in a pale green light as they are panchromatic and therefore sensitive to all colors of the spectrum. During the developing process, the negative is reversed to a positive so that when dried and bound with a cover plate is ready for projection. In no part of this process is the plate intensified with solutions of color nor is retouching necessary.

The cost of production, aside from the initial outlay for equipment, is not great. For other photographic work we have used an ordinary plate camera, and the light used has been from two 1,000 Watt nitrogen lamps. Of course, exposure has been much longer, from 10 to 15 seconds, but in this case a short exposure was not essential as the subject could be kept quiet for that period.

Before showing you a picture of the camera, it might be well to give some data about it. It is of the fixed focus type, that is, the lens remains at a fixed distance from the plate, while focusing is accomplished by moving the camera towards or away from the eye. The plate is 137 mm. from the lens and produces a magnification of 1¼. By extending the lens to a distance of 190 mm., an image practically twice the size of the subject is produced. A Tessar anastigmat lens with a working aperture of F 4.5 is used, and is not stopped down for eye work. With this large aperture lens some depth is sacrificed, but the exposure is considerably shortened. A short exposure is obviously necessary in taking pictures of the eye. For other pictures the same lens has been used but stopped down. This has necessitated an extremely long exposure, but has added depth to the picture.

Color photography is not difficult, in fact, it is simpler than the black and white process because each step can be timed accurately. Anyone without photographic experience can, with care, get excellent results. As a great deal of our work has been experimental on normal eyes, the number of pathological plates is limited.

Editor's Note.—A number of colored plates were shown.

1801 *Eye Street, Northwest.*

Correspondence

Real Cooperation.

To the Editor:

Yesterday afternoon I was an invited guest of the Woman's Auxiliary to the Richmond Academy of Medicine at Linwood Hall, the residence of the State President of the Woman's Auxiliary to the Medical Society of Virginia; the President of the local Auxiliary, Mrs. N. Thomas Ennett, presiding, and Dr. Warren F. Draper, State Health Commissioner, the guest speaker of the occasion.

It is of his address that I wish to write, for it showed a confidence in the Medical Profession, as well as a genuine spirit of real cooperation that pleased his audience, and aroused notable enthusiasm. He began by requesting assistance in his preventive health work, and then announced for the first time the new program of cooperation of the State Department of Health with the Medical Profession of the State.

His program, briefly outlined, is that whenever and wherever possible, his medical and nursing Staffs, especially in threatened epidemics, will do the preparatory work of educational propaganda, assemble the clinical material, inform the local physicians, and leave to them the medical treatment, which shall be charged for at a rate to be agreed upon among themselves. In sections where there may be no County Health Nurses, he proposes to supply temporary nursing attendance, and apply all preventive measures for the protection of the public, thus definitely segregating the particular provinces of preventive and curative medicine, and putting the duties and responsibilities where they rightfully belong. In other mass clinical work, such as Tonsillar Clinics, etc., he expects to follow the same program, and hopes that the active practitioners, in addition to their usual medical work, will still continue personally to practice and teach preventive methods as needed.

He informed the Auxiliary that he had already initiated this program in a threatened epidemic of diphtheria in Danville, and that it was receiving the endorsement and cooperation of local physicians and health authorities. This program is not a new one in anticipation to the many physicians who have patiently waited and hoped for such an announcement from public health authorities; but it will be new, startlingly new in its application; in

truth, it is a "blessed dream come true" at last. It is an opportunity, and more! It is a challenge to our profession that must be met in a cordial spirit and with a helpful hand, and without hindrance to the public health, or hurt to the public weal. This is an open, face-to-face offer to share equal and just responsibility, and it is confidently believed that the physicians of our State will worthily meet the added responsibility, for they were the original guardians of public health, and advised and practiced preventive methods, until such measures required police authority; but when these were demanded, they withdrew, but have always continued to practice and advise personal prevention and physical hygiene, and now, Mental Hygiene.

Dr. Draper concluded by saying, if his present attempts were well received, and successful results obtained, the present program would be enlarged and continued. He said he would bring this matter before the Council of the State Society at its mid-winter meeting. He spoke in euthusiasm, and with genuine interest, and it is now left to us practitioners, to make such an experiment a continuing reality to the benefit of all concerned, and to the lasting honor of our profession. Such helpful cooperation and coordination of Governmental and private efforts, if universally followed, would remove the phobias of State Medicine, and even decrease National encroachments upon the private practice and professional privileges of physicians.

We believe that this frank and catholic spirit of cooperation and just recognition of a correct principle, will be received in the spirit of justice in which it is offered, and will greatly and quickly advance the aims and ends of the profession we serve, and lovingly practice for others.

Long ago, the great Maudsley, said: "There are advantages always in recognizing a just principle; for, notwithstanding difficulties, it slowly modifies feelings and ideas, acts as a solvent of prejudices, and tends by hardly perceptible degrees to its realization in action."

At the recent Annual Meeting of the State Society at Roanoke, an initial and similar spirit of cooperation as an Association was shown, and now it only remains for us as individuals, to do as Maudsley advised, and to rationalize our fond hopes into satisfactory "realization-in-action"—and, shall we?

J. Allison Hodges, M. D.

Richmond, Virginia,
January 9, 1932.

Physicians Requested to Recommend Midwives.

The midwife problem in Virginia and other southern states is one of the most difficult to which to find a solution. A tentative plan has been worked out by Dr. W. A. Plecker, State Registrar, and his co-workers, as outlined in a letter just sent to Local Registrars, copy of which is given below.

To Local Registrars of Virginia:

There seems to be a feeling amongst a few of the physicians of the State that our system of granting permits to new midwives is too lax and that many now have permits who should not have them.

We realize the correctness of this view, but do not believe it wise to attempt to take the permits from those who already have them, except when they defy authority by making inside examinations, thus subjecting women to great danger of contracting childbed fever from the dirt and disease germs that cling to their improperly cleansed hands and under their finger-nails, and when they disregard the other rules on the back of their permits. The fear is that if forbidden to practice, they will continue to answer calls, perhaps without pay, and evade detection by not reporting the births. They would also not ask for nor use drops in the eyes of the child within five or ten minutes after birth, thus making it liable to infection and resulting blindness.

The case is different, however, with new applicants and we can gradually raise the standard of requirement.

After conference between committees from the Medical Society of Virginia and the State Department of Health, it has been decided to instruct local registrars to in the future grant no more permits except to those who are recommended in writing by one, and preferably by two or more physicians who have had them as assistants in confinements, and who have thus shown them how to manage simple cases. The physicians should also vouch for the character of the applicants, and their trustworthiness, cleanliness, and probable obedience of the law and the rules on the permit.

I am, therefore, informing you that hereafter no new midwife permits are to be granted except upon the written recommendation of at least one doctor. Midwife permits are under no circumstances to be granted to men, as has been done in several instances. The doctor's recommendation is to be clipped or

pinned to the pledge card and sent to the Bureau of Vital Statistics with the next report, or by letter sooner if desired. Eye drops and blank birth certificates will be sent them as soon as the card and recommendation are received. You will also urge upon them the importance of practicing according to the requirements.

If there is no doctor to recommend a woman, the local registrar may describe her qualifications to the State Registrar, who can instruct as to the permit.

W. A. Plecker, M. D.,
State Registrar.

January, 1932.

Woman's Auxiliary, to the Medical Society of Va.

President—*Mrs. J. Allison Hodges*, 5511 Cary Street Road, Richmond.
President-Elect—*Mrs. W. P. McDowell*, Larchmont, Norfolk.
Secretary—*Mrs. James K. Hall*, 3011 Seminary Avenue, Richmond.
Treasurer—*Mrs. Reuben F. Simms*, 2034 Park Avenue, Richmond.

Special Richmond Auxiliary Meeting.

On January 8th, upon invitation of Mrs. J. Allison Hodges, President of the State Society Medical Auxiliary, the members of the Richmond Auxiliary to the Richmond Academy of Medicine met at Linwood Hall in special session for mapping out the work for the New Year.

Mrs. N. Thomas Ennett, President of the Richmond Academy Auxiliary, presided, and the State President first made some special announcements, and the City President followed with a review of the work of the year, mentioning the special work of the members of her Auxiliary in its service to children at the Dooley Hospital, and also in furnishing lunches to school children in the city, and efforts to facilitate the medical examinations of pre-school children.

Miss Ellen Smith, of the State Department of Health, spoke of the work done among preschool children, and told of the financial saving to the State by having proper examination and segregation of these children, and the special advantages accruing to them in their future education.

Mrs. W. F. Drewry spoke on Public Relations, and stressed the fact that the Auxiliary members, by their membership in other Societies, could render a great service by interesting their non-medical organizations in topics that might arise concerning general matters of Health Education and Public Welfare.

Mrs. O. C. Brunk, Chairman of the Committee on *Hygeia* Circulation, made an encouraging report.

By invitation of Mrs. Hodges, Dr. Warren F. Draper, State Health Commissioner, was present, and gave a most stimulating address, pointing out especially how the members of the Auxiliary could be of benefit to his Department and the Medical Profession, generally. He also outlined to them for the first time his program for immunization, care of infectious diseases, etc., which he has just initiated in Virginia, whereby his Department will cooperate fully with the members of the Medical Profession, generally and locally, in preventive measures; the physicians of his Staff, and State and County nurses doing the educational and propaganda work of preparation, especially in any threatened epidemic, and the local physicians doing the curative work, and the Doctors deciding for themselves upon the medical fees to be charged for the duties performed. He emphasized especially the fact that this was to be the standing rule of his Department, except in exceptional cases, where physicians or nurses were not at hand to provide the necessary treatment. This program announcing such full and hearty cooperation with the physicians of the State, and such a clear statement of the particular provinces of both preventive and curative medicine, was enthusiastically received by the members. He stated that already he had put this program into effect in a threatened epidemic of diphtheria in Danville, and hoped that it would be the forerunner of many such similar movements in this and other states.

Following this address, Mrs. Hodges presented Dr. Stuart McGuire, Chairman of the Building Committee of the Library of the Richmond Academy of Medicine, and he invited the cooperation and asked the assistance of the members in furnishing the two lounge rooms in the new library for the Academy that is now under construction. This request was

received most favorably, and Mrs. Ennett, President of the local Auxiliary, stated that earlier in the year, by request of the members of the local Auxiliary, she had asked if its members could be of service in this new undertaking, and she now believed from what had been said that it was a movement in which they would all join most cordially, for they wished to have a regular meeting place and felt they were willing to assist in any way possible.

This meeting, which was really a "get-together" meeting for the New Year, was very inspirational, and it is believed that the Richmond Chapter is more thoroughly aroused than ever to join in aiding the medical profession in its great work of raising the standard of health in Virginia.

Auxiliary Plans Card Party.

The Woman's Auxiliary to the Norfolk County Medical Society sponsored one of the group of card parties held simultaneously in Norfolk on January the 20th, afternoon and night, for the benefit of the Norfolk Museum of Arts and Sciences.

At a meeting early in January, the Auxiliary also discussed plans for a card party and dance which it proposes to hold after Easter to raise money for a fund for special charitable work.

Mrs. Southgate Leigh, delegate to the National Woman's Auxiliary, at this time gave a report on the convention which was held at the time of the American Medical Association last June.

Mrs. Lewis Berlin announced that toys were distributed among white and colored children in the hospital wards at Christmas time, and Mrs. Starke Sutton reported that magazines were distributed among the patients in the local hospital wards and at the United States Public Health Service Hospital.

A Message from our National President, Mrs. Arthur B. McGlothlan.

Dear Auxiliary Members:

As we cross the threshold of a new year shall we, like other businesses, pause and take stock of ourselves to see where we have arrived in relation to the goal which we set for ourselves at our annual meetings?

Is there yet a county or a State Auxiliary that is not working under the direction of an advisory council or counselor of doctors appointed by its medical society? A questionnaire sent last summer to our thirty-seven constituent state units to ascertain if they had advisory councils appointed by their medical associations brought replies from thirty and revealed that twenty-eight of those did have an advisory council. One of our goals for this year is an advisory council or counselor for each of our county and State Auxiliaries. Where does your own Auxiliary stand with relation to this goal? It is hoped that each State president reporting at New Orleans will be able to say that not only her State Auxiliary but that each of its constitutent county units has an advisory council or counselor.

Have you as a county or State group set a goal for membership? Has your Auxiliary some sort of membership file by which you have kept a complete record of members from the beginning of your organization and are you retaining as members all those who have ever belonged? If not, could you not begin this first month in the new year to re-enlist them? Our national files contain many cards of members which we have had to class as "delinquents" because we have failed to receive dues for them or reports on them. Some of these have moved to other States, others have passed into the Great Beyond, still others have just failed to pay dues. Could not each organized county that has not already done so, this year make an effort to re-enlist every eligible woman who has ever been a member, make a card file of its membership and report to the State office the names of those who have moved to another locality and to a chairman, which each State president is being asked to appoint for that purpose, the names of those who have passed on?

Last year Mrs. Hunsberger did much work to get our national membership file into order. The adoption of the present plan of treasurers' receipt blanks, now universally used by the Auxiliaries, I think, is helping to perfect our files, but until every county and State Auxiliary adopts the above suggested plan and reports on all the names ever sent in by them to the national office as members our files will be cluttered by cards which we must continue to class as "delinquents."

It seems to me that each county administration should feel that it had failed somehow in its duty if it did not make a sincere, persistent and tactful effort to hold in member-

ship at least all those committed into its care by the former administration and unless its membership is already one hundred per cent of the wives of doctors belonging to the county medical society, it should attempt to make a definite, even though slight, gain.

The president of an Auxiliary in one of the sparsely settled western States, where great distances and mountainous country make frequent meetings impossible, wrote that she had received much inspirational material from the various national chairmen this year, but that as yet, her Auxiliary is only a social organization, whose primary purpose is to stimulate its members to attend annual meetings so that the attendance of the doctors themselves may be increased. This is a laudable goal. * * *

Some of the newly-organized Auxiliaries are attempting nothing more than to bring about unity and solidarity within the profession by means of social contacts between the families of doctors. My observations on my visits to Auxiliaries during this year leads me to believe that this function of the Auxiliary should not be underestimated. The medical societies are apparently more and more recognizing the forces both within and without the profession that are working counter to the best interests of the profession and the public and are feeling the need of a *unifying* force such as an Auxiliary may be when given sufficient encouragement and cooperation, and guidance by its medical society.

Recently an outstanding doctor in a county society which has no Auxiliary, objected to the organization of one because he said the Auxiliary is merely duplicating the work of other women's organizations. He gave as an example the various types of philanthropic work done by our units. This doctor had lost sight of two important factors in connection with the philanthropic projects of most of the Auxiliaries. First, the philanthropic work done by the Auxiliary usually is related closely to the work of the medical profession, for example: participation in Christmas seal sales of the tuberculosis societies; various types of work for hospitals, sanatoriums and preventoriums; scholarship loan funds for medical students and students of nursing; contributions to the Medical Benevolence Fund by the Pennsylvania Auxiliary; contributions to memorials established or approved by medical societies. Because of the humanitarian and almost universal appeal to women of philanthropic work it will serve as a bond to hold them together while they establish unity and good fellowship within their group and while some to whom the educational and legislative programs make a strong appeal work under the guidance of their advisors on these programs within their own and other women's groups. Has your Auxiliary a philanthropic goal for this year? Might it increase interest if you had such a goal?

The growing interest in the educational and public relations programs of the Auxiliaries this year has been most gratifying. That many State medical societies have prepared educational programs for their Auxiliaries and have endorsed the National Auxiliary study envelops for use in developing these programs is satisfying. In an increasing number of county Auxiliaries a few women are being discovered who are vitally interested in the educational programs and who are a real force in interpreting the ideals and work of the medical profession to other women's groups in which they work by influencing these groups in the choice of approved literature and speakers to be used on their health programs. One of our goals this year is to discover such women, to urge them to represent our groups in other women's organizations by accepting positions of leadership therein, and to back them up by our loyal support. Are there such women in your group working, or capable of working under supervision of your advisory council in other women's organizations?

The State Auxiliaries have made much progress this year in securing chairmen corresponding to the national chairmen. Our organizations cannot function properly until county Auxiliaries also have such chairmen who will receive program suggestions and materials from the State chairmen and who will report to the State chairmen on the progress of the county work. The function of the National Auxiliary is to stimulate interest in types of approved work possible to be done and to serve as a clearing house for information on the kinds of work being done successfully by the various Auxiliaries. It is obvious that little interest can be stimulated if there are not county and State chairmen corresponding to the national. How near to this goal is your Auxiliary?

During the year between annual meetings our Press and Publicity Committee reporting

to the State Journals and through the Bulletin of the A. M. A. is our clearing house for information and news. Has your State contributed its share of news to the State and national chairmen? * * *

Do all of us realize that the American Medical Association is publishing *Hygeia* for the layman, to meet his insistent demand for information concerning the functions and care of the human body, and that if this demand is not satisfied by *authentic* information he is more likely than not "to go floundering away from scientific medicine?" If any of you are doubtful as to the helpfulness of *Hygeia* for teachers, mothers, nurses or doctors write to Mrs. Rogers N. Herbert, 1509 Stratton Avenue, Nashville, Tenn., for a folder of "*Hygeia* talks," which will probably convince you. If you are not a reader of *Hygeia* write, "The Circulation Manager," 535 North Dearborn Street, Chicago, Ill., for a sample copy, read it and let it convince you of its value.

No woman who is promoting the distribution of *Hygeia* through schools or homes or other educational groups should consider herself a magazine solicitor, but instead she should feel that she is an important factor in a health education project, devised and promoted by the American Medical Association, for the good of both the profession and the public.

* * *

And now as I write comes through the mail the fulfillment of one of the Kentucky Auxiliary goals set at their annual meeting at Lexington in September which I attended—the first issue of their new "*Quarterly*," the first bulletin, I believe, to be undertaken by a State Auxiliary! Congratulations, Kentucky!

* * *

Mrs. Joseph Hume, of New Orleans, is the chairman of the next convention which is to be held next May 9th-13th in that interesting old city of the South, New Orleans. Our own President-Elect, Mrs. Walter Jackson Freeman, who so skillfully guided the Convention in Philadelphia, is also a member of the New Orlean's Convention Committee.

There we shall find both pleasure and inspiration. May I hope to meet you there, one and all! May we have the satisfaction of reporting that we have reached all goals set for the current year! There are yet three more working months in which to accomplish them.

And won't you all be considering the goals we should set for next year?

Faithfully yours,

(Mrs. Arthur B.) Anna F. McGlothlan.

Truth About Medicine

In addition to the articles enumerated in our letter of November 28th, the following have been accepted:

Ciba Co., Inc.
  Tablets Dial—Ciba, 0.03 Gm. (½ grain)
Clinadol Co., Inc.
  Clinadol Co.'s Cod Liver Oil Concentrate
Lederle Laboratories, Inc.
  Surgical Maggots—Lederle
Wm. S. Merrell Co.
  Fibrogen Local—Merrell
    Fibrogen Local—Merrell, 7 c.c. vials
G. D. Searle & Co.
  Gold Sodium Thiosulphate—Searle
    Ampules Gold Sodium Thiosulphate—Searle, 1 c.c.
    Ampules Gold Sodium Thiosulphate—Searle, 2 c.c.
    Ampules Gold Sodium Thiosulphate—Searle, 5 c.c.
E. R. Squibb & Sons
  Thromboplastin Local—Squibb
    Thromboplastin Local—Squibb, 20 c.c. vial.

The following article has been exempted and included with the List of Exempted Medicinal Articles (New and Non-official Remedies, 1931, p. 477):
  Lederle Laboratories, Inc.
    Fluid Extract of Ergot (Lederle)

PROPAGANDA FOR REFORM

Schellberg Apparatus for Colonic Therapy Not Acceptable.—The Council on Physical Therapy reports that the Schellberg apparatus for colonic therapy, manufactured by the Schellberg Manufacturing Company, New York, is stated to be a "new and improved medical apparatus for use in proctotherapy." In the letters patent the statements are made, among others, that "it is a further object of the invention to provide means which in its action will remove all obstructions and clean all pockets of the colon"; and also, "it is a still further object of the invention to construct an apparatus the use of which permits of a thorough cleansing of the several passages and is capable in use of insertion to a point where the cecum may be treated." The chief mechanical feature of the whole equipment is apparently the metal apparatus consisting of a by-pass valve which permits convenient entry into a rectal tube, with special tip, of the irrigating or other fluid; and also permits the exit from the rectal tube of the content within the sigmoid or colon. Acceptance of the recommendation and method having to do with the introduction of a rectal tube as far as the cecum, for irrigating or other purposes, more or less as a routine, could not, in the opinion of the Council, be justified without critical evidence of the necessity, safety and superior efficiency of such a measure. The firm has failed to furnish this evidence. In the descriptive matter accompanying the apparatus, sweeping and uncorroborated statements are made relating to the physiology of the colon. The Coun-

cil on Physical Therapy declares the Schellberg Apparatus for Colonic Therapy not acceptable for inclusion in its list of accepted devices. (Jour A. M. A., November 7, 1931, p. 1385).

Listerine, An Example of Bottled Psychotherapy — The odor and taste of thymol with a little of this and that. The formula given on the carton "Thyme, eucalyptus, baptesia, gaultheris and mentha, of each one part, boric and benzoic acids, twenty-nine parts, ethyl alcohol, two hundred and fifty parts, water to make one thousand parts. Lambert Pharmacal Company" is merely "a formula." The A. M. A. Laboratory found that the following gives a solution practically identical (chemically and bacteriologically) with Listerine: Boric acid 23.4 Gm., benzoic 0.4 Gm., alcohol (94%) 280 0 c.c., menthol 0.375 Gm., thymol 0.75 Gm., eucalyptol 0.8 c.c., methyl salicylate 0.1 c c., baptesia (wild indigo) fluid extract N. F. 10.0 c.c., water to make 1000.0 c.c. What progressive physician would attempt to write such a poly-pharmaceutical prescription! (Jour. A. M. A., November 14, 1931, p. 1466).

The A. M. A. Chemical Laboratory.—In 1906 the Board of Trustees directed the creation of a chemical laboratory in the headquarters of the American Medical Association. The chief function of the Laboratory was and is to aid the Council on Pharmacy and Chemistry in its consideration of proprietary products. In 1906 deceit was rampant; false formulas and improbable chemical statements were not uncommon. Today there is much less of such gross deception. (Jour. A. M. A., November 14, 1931, p. 1470).

The Menace of Methyl Alcohol.—The dangers from the use of methyl alcohol have increased because the prohibition of alcoholic beverages has led to the substitution, in ignorance or unwittingly, of methyl alcohol. The danger has been increased by its use in automobiles as an anti-freezing agent in radiators of motor cars. In addition to the deliberate or the unsuspecting imbibition of the harmful methyl alcohol there are the dangers not only of inhalation of its vapors but also of its possible absorption through the skin. From studies on animals, it has been estimated that approximately one ounce of methyl alcohol repeatedly in contact with the human body, under conditions favorable to retention and evaporation, constitutes a threat to well being. It has also been estimated on the basis of experiments on monkeys, that the vapors of one ounce of methyl alcohol entering the human body constitute a threat to life even when the exposure is distributed over two or three days. (Jour. A. M. A., December 5, 1931, p. 1710.)

Liver Extract in Pernicious Anemia.—The treatment of pernicious anemia is not merely with liver or a potent substitute, but with enough liver or potent substitute for the given individual case. A falling red blood cell count is a clear-cut indication for the administration of much more potent material. Progressive cord changes are also a clear-cut indication for the administration of much more potent material, no matter whether the red blood cells are present in normal or in decreased numbers. If the patient has difficulty in absorbing the material when given orally, the parenteral administration may be of great advantage. The following liver extracts have been accepted for New and Nonofficial Remedies: Liver Extract No 343 (Lilly), Concentrated Liver Extract—Armour, Liver Extract —Fairchild, Liver Extract—Lederle, Marine Liver Extract—White, Solution Liver Extract—Parenteral —Lederle. (Jour. A. M. A., December 19, 1931, p. 1912).

The Geneva Convention of 1931.—The international conference on the limitation of the manufacture of narcotic drugs, held in Geneva, Switzerland, during the past summer, was guided not only by altruistic motives but also by practical objectives. The treaty resulting from the conference should be a beneficial influence in helping to solve the medicosocial problem of drug addiction, in simplifying the administration of laws and regulations governing the distribution and uses of these drugs, and in reducing the quantity of contraband arriving at American ports. The convention is designed to control further the international traffic and distribution of narcotic drugs and to limit the manufacture of all dangerous and potentially dangerous narcotic drugs to medicinal and scientific requirements. (Jour. A. M. A., December 12, 1931, p. 1801).

Book Announcements

A Doctor of the 1870's and 80's. By WILLIAM ALLEN PUSEY, A. M., M. D., LL. D. Sometime President of the American Medical Association and of the American Dermatological Association. 1932. Charles C. Thomas. Springfield, Illinois. Octavo of 153-xiii pages. Illustrated. Price, $3.00.

"Believing this accurate account of the life of a country doctor will be of permanent value, this book has been well printed on a fine quality of paper and beautifully designed and bound."

Source Material for the Social and Ceremonial Life of the Choctaw Indians. By JOHN R. SWANTON. Smithsonian Institution. Bureau of American Ethnology. Bulletin 103. United States Government Printing Office, Washington, D. C. 1931. Octavo of 282 pages. Cloth. For sale by the Superintendent of Documents, Washington, D. C. Price, 60 cents.

Courts and Doctors. By LLOYD PAUL STRYKER. New York. The Macmillan Company. 1932. Octavo of 236 pages. Cloth. Price, $2.00.

Varicose Veins. With Special Reference to the Injection Treatment. By H. O. McPHEETERS, M. D., F. A. C. S., Director of the Varicose Vein and Ulcer Clinic, Minneapolis General Hospital; Attending Physician, New Asbury, Fairview, and Northwestern Hospitals, Minneapolis, Minn. Third Revised and Enlarged Edition. Philadelphia. F. A. Davis Company. 1931. Octavo of 285 pages. Illustrated with 62 halftone and line engravings. Cloth. Price, $4.00.

Illustrated Primer on Fractures. Prepared by the Cooperative Committee on Fractures. Under Auspices of Section on Surgery, General and Abdominal and Section on Orthopedic Surgery. In Cooperation with Department of Scientific Exhibit of the American Medical Association. Second Edition. Revised and Reedited. American Medical Association, Chicago, Ill. 1931. Quarto of 63 pages. Cloth. Price, $1.00.

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VOLUME 58 FEBRUARY, 1932 No. 11

Editorial

"Liver Deaths."*

A consideration of causes of death following operations on the gall-bladder and ducts must hold an interest for every surgeon and physician. It is, therefore, worth while to follow the discussion recently given this subject by Dr. Heyd, Professor of Surgery of the New York Post-Graduate Medical School and Hospital. In this communication, Heyd points out that E. M. Stanton had previously published an analysis of 500 fatalities in a combined series of approximately 10,000 gall-bladder operations. One is impressed with the importance of any procedures covering 10,000 observations that were signalized by 500 fatalities. So the causes of death in such a group must be held up to be in range of possibility. The causes of death in this collection of fatalities were variously given as peritonitis, pneumonia, embolism, cardiac failure, spontaneous perforation, sepsis, and renal failure, while "shock" and "hemorrhage" caused about 10 per cent of the deaths.

Heyd calls attention to a small group of fatal cases occurring in the New York Post-Graduate Hospital in which the cause of death, he feels, could not be placed in the above group. Heyd calls attention to three "distinctive types of death" which he designates "liver deaths." He describes the first type of death by the case of a woman, aged 37, who entered the hospital complaining of having "gas" after eating and of having occasional pain in the upper right quadrant. There had been one attack of pain which had required a hypodermic of morphine. Thirty-six hours after the operation the patient died. The second type of liver deaths was illustrated by operation upon and drainage of the common duct, whether for obstruction or infection. The third type is described as associated with common duct infection and pancreatitis.

Persons interested in this subject should read the discussion of this paper.

*J. A. M. A., December 19, 1931, page 1847.

Intravenous Use of Barbital Compounds.*

Every physician should read the authorized publication of the Council on Pharmacy and Chemistry on the intravenous administration of barbital compounds. Such a report as this brings to the busy physician a summary of known facts on the subject, places before him in more or less brief forms a survey of the general subject as to its effects, good or bad, and enables the physician to arrange in his own mind a more balanced judgment as to the merits and demerits of the problem discussed. Much has been done by authorized committees of organized medicine to bring to summary and conclusion opinions upon subjects that have been widely and frequently agitated by medical discussion and publications.

Within the last decade, the wide use of barbital preparations by the medical profession and the laity as well would seem to demand on the part of practitioners a more thorough and complete knowledge of the nature and effects of these preparations and so an oppor-

*J. A. M. A., Vol. 97, No. 25, page 1886.

tunity presented, such as the one referred to above, should be embraced by physicians in active practice.

Intravenous use of barbitals demands knowledge of the direct effect upon the blood. The barbitals are insoluble organic acids which require large amounts of alkali for solution. The reports note that amytal, as illustrating the point, requires a degree of alkalinity—the equivalent of a buffer solution with P_H 9.5 or 9.8, or the reaction of nearly a ten-thousandth normal solution of sodium hydroxide which is approximately 900 times as alkaline as the blood.

One should note that experimentally the intravenous use of non-fatal though effective doses of sodium amytal advocated for anesthesia produces:

1. Immediate and sustained fall of blood pressure.
2. Acceleration of the heart and paralysis of the vagus nerve control (except possibly phenobarbital).
3. Cardiac depression.
4. Depression of gastric and intestinal motility.
5. Depression of smooth muscles of the intestine, uterus and blood vessels.
6. Reduction in the consumption power of skeletal muscles for sugar.
7. Hyperglycemia, with or without glycosuria.
8. Respiratory depression and irregularity.
9. Rapid fall of body temperature.
10. Prolonged narcosis.
11. Cerebral ischemia.
12. Depression of basal ganglions in the brain.
13. Decreased or increased urine.
14. Decreased excretion of phenolsulphon phthalein.
15. Decrease in diuresis of thyroxine.

Intravenous use of barbitals in obstetrics offers the following dangers:

a. Asphyxiation of the child and restlessness of the mother.
b. Undesirable general protoplasmic poisoning.
c. Post-operative depression is prolonged.
d. Pulmonary congestion and edema.
e. Difficulty in keeping respiratory passages free from accumulating mucus.
f. Delirium and restlessness.
g. Intake of fluids impaired and voiding omitted.
h. Special post-operative nursing care is indispensable.
i. Occasional toxic dermatitis occurs.
j. The method is contraindicated in aged and debilitated patients.
k. Sudden death may occur.

The disadvantages noted in this report of the intravenous use of barbitals are herewith appended:

a. Special preparation and adjustment of solution for injection of barbitals, especially if the sodium salts are more readily available, is inconvenient.
b. Solutions are not always clear.
c. Delays and annoyances accompany the method.
d. Intensive vigilance of the attendants is required.
e. Alkalinity of the solution is greater than that possible in the body and, therefore, irritation occurs.
f. There is unnecessary injury to the blood and the danger of colloidal shock.
g. There are unfavorable intravenous reflexes.
h. There is danger of pulmonary embolism.
i. Determination of the exact dosage is difficult.
j. There is danger of sudden and alarming fall of blood pressure.
k. There is marked respiratory depression and irregularity.
l. Reflex excitability is increased.
m. In operations on the upper air passages, poor relaxation of the masseters and laryngospasm occur.
n. Analgesia is seldom, if ever, attained.
o. The desired action is difficult to obtain.
p. Considerable individual variability exists.
q. In case of overdose, the drug cannot be retrieved.
r. Proposed antidotes are not dependable or satisfactory.
s. The duration of action is too brief for satisfactory operations.
t. Without the usual preanesthetic aids, such as morphine and scopolamine, and supplementary anesthesia with volatile anesthetics, barbitals cannot be relied on for use in operations.

n. Useful cooperation and sudden awakening of the patient operated on under local anesthesia are eliminated.

v. In surgery, the field of usefulness is narrow and limited.

Light Therapy.*

Our readers are urged to note the presentation on "The Present Status of Light Therapy" by Dr. Edgar Mayer, of Saranac Lake, N. Y., and authorized for publication by the Council on Physical Therapy of the American Medical Association. It can but be improvement of one's general information upon an illy understood branch of therapy to carefully peruse an article that, under the critical censorship of the A. M. A., endeavors to present a summary of accepted knowledge in physical therapy. To physicians and surgeons receiving scholastic and medical education in the early years of the century, the value of physical therapy was ever in considerable doubt. Such measures for combating illness and pathology were largely in the hands of persons not highly regarded as representing the best of medical and surgical schools of thought or practice. But latterly, under the influence of scientific advancement in this field, physical therapy has reached a rightful place in the estimation of the profession and has been given the special care of a committee of a national organization.

It is under such consideration that the article by Mayer on Light Therapy is presented and is commended to our readers as a means for informing themselves on this subject.

Mayer introduces his discussion by making a frank statement of the limitations of knowledge in this field and affirms that many claims made for the use of radiation are still based on empiric results. He affirms further that "perhaps when monochromatic sources of ultraviolet energy in sufficient intensity have become available to repeat experiments, more exact information will be obtained." The value of sunlight and artificial sources of light are given consideration in therapeutic application to disease.

After discussing more or less in detail some physical properties of light, Mayer calls attention to biologic effects of light. Red and infrared rays produce immediate hyperemia, if applied in sufficient intensity. Ultraviolet rays are rapidly absorbed by tissues at a depth of less than 1 mm., and produce marked chemical changes. Ultraviolet rays impair the growth of pathogenic and non-pathogenic bacteria as well as destroy them. Young cultures are more sensitive to this action than the old ones. Cholesterol, a substance found in large quantities in the skin, is activated chemically by ultraviolet radiation. Cholesterol under the effect of ultraviolet rays becomes endowed with antirachitic power. This may be ergosterol. Likewise, Mayer states, phytosterol of plants is activated. Food products, such as fats, oils, milk, vegetables, after exposure to ultraviolet rays, become antirachitic. The greenness is someway associated with ultraviolet rays and Vitamin A is associated with greenness of plants.

The increase of calcium and phosphorus content of the blood stream in rickets and tetany are influenced by ultraviolet rays. Antirachitic and calcium depositing agents, namely, Vitamin D and ultraviolet rays of sunlight and artificial sources, increase, says Mayer, the free acid of the gastric contents, resulting in holding calcium salts in solution and phosphorus absorption is increased as a consequence. Radiation effects, under proper application, an increase of red blood cells and reticulocytes and hemoglobin increase has been reported as having been gotten. Other important and favorable influences are noted on the quantity and nature of the blood.

The technic of exposure to the sun is discussed and should be interesting to doctors. Clinical results are expounded with conservatism and caution but with confidence that important advantages are to be gained in the proper use of light therapy in the treatment of human ills.

*J. A. M. A., Vol. 98, No. 3, page 221.

President's Message

Diphtheria.

It seems appropriate at this time to call to the attention of the members of our Society a condition that concerns all of us. When we look back to the time previous to the discovery of antitoxin and toxin-antitoxin, we are filled

with anguish and distress in contemplating the picture of the numberless deaths that occurred and the helpless efforts of our physicians of those days as they struggled, without any effective remedy, against the scourge of diphtheria. Some of us today still have vivid memories of the agonizing efforts of our parents as their children succumbed to this awful disease despite the futile and heartrending care of physicians and friends.

How different is the situation today! We have a remedy, which if used early and in large doses, is effective, and better still, we have a preventive. But we are not using these remedies to anything like the extent needed today.

Diphtheria, as we know, is found all over our State, in every town, village and community, and may occur at any season in the year. For effective treatment cases should be seen very early. In thinly settled communities it is often impossible to secure the services of a physician to administer antitoxin promptly, and this makes it all the more important and necessary to immunize all children.

It is hard to exaggerate the importance of protecting a child from diphtheria, just as it is important that we protect him from blindness in infancy. Every case of diphtheria is likely to cause infection in others and many are carriers for years. Doubtless before many years we will have compulsory immunization. However, it will take time and earnest and vigorous education of our people in preventive medicine before taking that step. This will not come except by and through the earnest efforts of the medical profession. It will come when the physicians of the State and nation awake to a full realization of their duty and responsibility. There are still those who, in ignorance, refuse to allow antitoxin to be used, and contend, in case of death, that antitoxin and not diphtheria was the cause.

We have by no means reached the goal in the treatment of infectious diseases until the remedy is within the reach of all, and until doctor and layman alike are educated to the full active belief in prevention as the chief remedy for the eradication of disease.

I am assuming that the members of the Society are as much concerned in the prevention of disease, as in the treatment and care of their patients. Many of you are doubtless familiar with the statistics—many others are not familiar with the conditions throughout the State. A few figures may help to arouse us to a true realization of the situation, and stir up the physicians all over the State to active participation in combating the onslaughts of this disease.

From 1926 to 1930, inclusive, there were 12,946 cases of diphtheria reported in Virginia, with 1,054 deaths in the same period. In the first eleven months of 1931, 3,905 cases were reported, and it is most probable that the December figures for 1931 will carry the total beyond that of 1923, which was 4,656 cases with 337 deaths.

Because of the marked increase of diphtheria within the State during the past few months, and the expressed concern of many citizens in having effective measures carried out for the control or eradication of this disease in future years, the Medical Society of Virginia, cooperating with the State Department of Health, should work out a combined plan whereby the resources of the State and local health agencies may be made available to aid the physicians in administering diphtheria immunizations to children of the State between the ages of six months and fifteen years.

It has been with a great deal of interest that I have discussed the outlines of a plan with Dr. Warren F. Draper, our State Health Commissioner, and it is our purpose to present this matter to the Councilors at the winter meeting to be held in the next few weeks; and to ask Dr. Draper to be present and assist us in adopting a wise and workable plan. The details of any plan that may be adopted or agreed on will be published in the next JOURNAL, and a copy sent by our Secretary to each local society in the State, with the hope that this proposal may result in action which will accomplish a sufficient number of diphtheria immunizations to materially affect the incidence of this disease during the next season, and that it may serve as a basis for the development of future successful cooperative enterprises with the physicians of the State.

I. C. HARRISON, M. D.,

President, Medical Society of Virginia.

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

A Small Field Well Tilled.

An investigation of the educational activities of component societies will be the basis of discussion in the annual meeting of the Department of Clinical Education to be held on January 21, too late for reporting until the next issue of the MEDICAL MONTHLY. Reports already received from almost half the secretaries indicate that continuing medical education is primarily the function of the comparatively few city and district societies. Of the county societies only a small number apparently have sufficient size and interest to attempt clinical and scientific meetings regularly; three of the leading county societies, those of Albemarle, Norfolk, and Warwick, are in fact if not in name urban groups.

Since in its present development post-graduate medical education in Virginia is limited in facilities, agencies, and resources, it should strive to be "a small field well tilled." The reporting officers generally agreed upon methods

SOCIETIES REPORTING EDUCATIONAL MEETINGS

Name of Society	*Interval of Meetings*	*Help Needed in Securing Speakers?*	*List of Available Speakers Wanted?*	*Help Useful in Sending Notices?*	*Can Meetings be Reported?*	*Can Attendance Lists be Furnished?*
City Societies:						
Fredericksburg	Mo.	Yes	Yes	Yes	Yes	Yes
Lynchburg and Campbell County	Mo.	Yes	Yes	No	Yes	Yes
Richmond Academy	Bi-wk.	Yes	Yes	No		No
Roanoke Academy	Mo.	Yes	Yes	No	Yes	Yes
(Not yet reported: Alexandria, Pittsylvania-Danville.)						
District Societies:						
Clinch Valley	Semi-ann.	Yes	Yes	Yes	Yes	Yes
Mid-Tidewater		Yes	Yes	Yes	Yes	Yes
Post-Graduate	Bi-mo.	Yes	Yes	Yes	Yes	Yes
Seaboard (alternately in Va. and N. C.)	Ann.				Yes	
Second District	5 a yr.	Probably	Yes	Yes	Yes	Yes
Southside	Quart.	Yes	Yes	Yes	Yes	Yes
Southwestern	Semi-ann.	Yes	Yes	Yes	Yes	Yes
Valley of Virginia	Semi-ann.	Yes	Yes	No	Yes	Yes
(Educationally inactive: Central District, Rappahannock Valley—reorganized as Fredericksburg Medical Society. Not yet reported: Northern Neck, Northern Virginia, Piedmont, South Piedmont.)						
County Societies:						
Albemarle	Mo., 9	Yes	Yes	No	Yes	Yes
Alleghany-Bath	Bi-mo.	Yes	Yes	Yes	Yes	
Arlington	Occasional	No	No			Probably
Fairfax	Quart.	Yes	Yes	No	Yes	Yes
Fauquier	Mo.	No	No	No	Often	Probably
James City	Quart.	Yes	Yes	Yes	Yes	Yes
Loudoun	Mo.	No	No	No	Yes	Yes
Mecklenburg	4 Mo.	Yes	Yes	Yes	Always	Yes
Norfolk	Wk.	Probably	Probably			Too many
Prince Edward	Mo.				No	Yes
Warwick	Semi-Mo.	Yes				
(Educationally inactive: Buckingham, Hanover, Lunenburg, Nansemond, Nelson, Russell, Tazewell. Not yet reported: Accomac, Amelia, Augusta, Bedford, Botetourt, Charlotte, Cumberland, Dickenson-Buchanan, Elizabeth City, Floyd, Halifax, Isle of Wight, Lee, Louisa, Northampton, Patrick-Henry, Powhatan, Princess Anne, Rockbridge, Rockingham, Scott, Southampton, Wise.)						

by which the Department could help them to improve their education work: first, in obtaining speakers, partly by means of a list of competent speakers who will be available for their programs (preparation of such a list was immediately begun); second, by giving notice of meetings, especially by advance publication in the MEDICAL MONTHLY and in some cases by sending letters and cards of announcement not only to the local membership but also to the physicians in adjacent territory; and third, by follow-up reports in the MEDICAL MONTHLY with lists of physicians in attendance upon educational meetings. Needless to say, the Department of Clinical Education will put these practices into effect to the best of its ability and according to the wishes of each of the groups it serves.

One of the most interesting suggestions submitted referred to the educational importance of full reports to the family physicians in regard to patients admitted to the college hospitals, a suggestion endorsed by the Chairman of this Department as one that "is perfectly reasonable and should unquestionably be done." The problem of stimulating interest in society meetings was brought up in several reports—a problem which will most likely tax the zeal of interested officers for some time to come. Gratifying willingness to cooperate in educational programs was expressed or implied. In only two answers was the purpose of the Department of Clinical Education patently misunderstood: "Our members do not want an instructor to come into this territory to tell them on home ground how to do their work," and "Our Medical Society will not consider any educational program put on by the Medical Society of Virginia in their home towns as they believe that it lowers their standing in the district in which they work."

It cannot be too often emphasized that the Department of Clinical Education has no intention of trying to "put over" any program not desired by the members of a group. It exists only to further the educational activities of societies which need and request its assistance. It is not an outside body attempting to interfere in professional matters, but the arm of the Medical Society of Virginia created by it to reach out with definite encouragement to those of its members who are big enough in mind and heart to admit that they do not know it all and that they want to keep on learning. Fortunately for medical progress, they are the vast majority!

In the accompanying table is a summary of educational activities reported by Virginia societies to date.

GEORGE W. EUTSLER,
Executive Secretary.

Scheduled Meetings

PROGRAM OF THE NORFOLK COUNTY MEDICAL SOCIETY FOR THE MONTH OF FEBRUARY, 1932

FEBRUARY 1ST. MONTHLY BUSINESS MEETING.

FEBRUARY 8TH. SURGICAL SECTION. Program to be provided by Sarah Leigh Clinic.

FEBRUARY 15TH. SECTION ON MEDICINE. Report of an Unusual Case of Bone Marrow Dysfunction—Dr. M. S. Fitchett.
Consideration of Radiation Therapy in Lympho-Blastoma—Dr. Clayton W. Eley.

FEBRUARY 22ND. SECTION ON OBSTETRICS. Relation of Pelvic Disease to Certain Systemic Conditions—Dr. John Cooke Hirst (*invited guest*), Philadelphia.

FEBRUARY 29TH. SECTION ON EYE, NOSE AND THROAT. Demonstration of the Binocular Ophthalmoscope, with Selected Pathological Eye Cases—Under direction of Dr. A. A. Burke.

POST-GRADUATE MEDICAL SOCIETY OF SOUTHERN VIRGINIA

The next meeting of the Post-Graduate Medical Society will be held at Lawrenceville, Va., Tuesday, February 23rd, at 2:30 P. M. The program will be as follows:

Common Chronic Infections of the Cervix and Vagina—Dr. E. L. Kendig, Victoria.

Indications for Contraception—Dr. W. M. Bowman, Petersburg.

Child Welfare—Member of the State Board of Health.

Special feature to be arranged by Dr. J. C. Flippin, University, Va., chairman of the Department of Clinical Education.

All members of the Medical Society of Virginia are invited to attend any scheduled meetings.

Proceedings of Societies

Roanoke Academy of Medicine.

The first regular meeting of the Academy was held at the Elk's Club in Roanoke, Va., on November 2nd, at which time scientific papers were read by Dr. J. M. Bishop, Roanoke, and Dr. J. B. Nicholls, Catawba Sanatorium. A report of the delegates to the last meeting of the State Society was read by Dr. T. J

Hughes. Dr. Rees Morgan was unanimously elected to membership.

Officers of the Society are Dr. Everett E. Watson, Salem, president; Dr. F. A. Farmer, and Dr. E. C. Ambler, both of Roanoke, vice-presidents; and Dr. Charles H. Peterson, Roanoke, secretary-treasurer.

The meeting on December 7th, at Shenandoah Hospital, was in charge of the Hospital Staff. The meeting was presided over by Dr. Frank Helvestine and interesting papers were presented by Dr. R. L. Mason, Dr. J. D. Willis, Dr. G. M. Maxwell, Dr. W. B. Huff, Dr. C. H. Peterson, Dr. T. J Hughes, and Dr. L. G. Richards. The program was followed by a social hour.

C. H. Peterson, *Secretary.*

James City-New Kent Medical Society.

There was a meeting of this Society held at Williamsburg, Va., January 7, 1932, at the Williamsburg Inn. Seven members were present. Dr. T. Brantley Henderson, who has recently moved to that city and is specializing in eye, ear, nose and throat work, was elected to membership. Dr. M. W. Crawford, of Lee Hall, Va., was present as an invited guest.

A motion was made and approved to have a representative of the Child Welfare Committee to be present at the next meeting. There was much discussion in regard to the vaccination and administration of toxin-antitoxin to the school children by the State Board of Health.

It was decided that the officers of the Society should hold office for two years so that Dr. A. M. Sneed, Toano, continues as president; Dr. J. R. Parker, Providence Forge as vice-president; and Dr. J. R. Tucker, Williamsburg, secretary-treasurer. It was also voted to hold the meetings every two months, the next meeting to be held at Toano, Va., the first Thursday in March.

J. R. Tucker, *Secretary.*

The Halifax County Medical Society,

At its meeting on December 17th, elected the following officers for the ensuing year: President, Dr. C. B. White, Halifax; vice-president, Dr. George A. Stover, South Boston, and secretary-treasurer, Dr. William C. Brann, South Boston.

The Loudoun County Medical Society

At a recent meeting elected Dr. M. H. Hiden, Warrenton, president, and Dr. John A. Gibson, Leesburg, secretary.

News Notes

The Tri-State Medical Association of the Carolinas and Virginia

Will hold its annual meeting in Raleigh, N. C., February 15th, 16th and 17th, with the president, Dr. Beverley R. Tucker, of Richmond, Va., presiding. The Sir Walter will be hotel headquarters. There will be early morning clinics and a number of interesting scientific papers by guests and members. It is announced that there are a number of new members. Other information may be received from Dr. J. M. Northington, secretary, Charlotte, N. C.

Medical College of Virginia News.

Ninety-one students are now enrolled in the medical section, Officers' Reserve Corps, at the Medical College of Virginia, Richmond. Since its establisment in 1922, with the first class graduating in 1926, 159 graduates in medicine have been commissioned first lieutenants in the medical section, Officers' Reserve Corps, United States Army.

The Phelps-Stokes Fund has made a gift of $200 toward the purchase of books for the new library of the St. Philip Hospital school of nursing.

Dr. Alan Gregg, director of medical sciences of the Rockefeller Foundation, was the guest of the Medical College of Virginia, Richmond, on January 5th.

Dr. William P. Stroud, professor of cardiology at the Pennsylvania Hospital, a teaching unit of the University of Pennsylvania, was a guest of the Medical College of Virginia, Richmond, on January 12th. He addressed the students of the third and fourth year classes and visited the various hospitals and clinics of the institution.

The Medical College of Virginia, Richmond, entertained the members of the General Assembly at a buffet luncheon at the college on

January 14th. The luncheon was given at Cabaniss Hall and was well attended.

Dr. Harvey B. Haag, assistant professor of pharmacology and physiology at the Medical College of Virginia, Richmond, has returned to the college after a six months' leave to study in Germany.

The number of patient visits to the crippled children's clinic sponsored by the Richmond Kiwanis Club at the Medical College of Virginia, Richmond, increased this year 598 over last year. The total number of such visits was 3,557 for the year ending December 31, 1931.

There were 4,213 patient visits to the outpatient department of the Medical College of Virginia, Richmond, for the month of December, 1931. The average number of patients per clinic day was 168, the maximum number 221, the minimum ninety-nine. The work of this department of the college has doubled within the last few years and is steadily increasing.

The regular scientific monthly meeting of the Faculty and Staff of the Medical College of Virginia will be held Thursday, February 18, 1932, at 8:15 P. M. in the auditorium of the Saint Philip Dormitory.

The program will be as follows:

1. "Utero-placental Apoplexy. A Case Report." Dr. George Holmes.
2. "Cretinism. A Case Report." Dr. Lee E. Sutton.
3. "Stab Wounds of the Ventricles. A Report of Two Cases, Noting the Significant Absence of Anginal Pain." Dr. William B. Porter.

News from University of Virginia, Department of Medicine.

At the meeting of the University of Virginia Medical Society on December 7th, Dr. Edwin McQuade gave a review of Recent Studies on the Common Cold, Dr. William A. Brumfield discussed The Epidemiology of Syphilis, and Dr. D. C. Smith presented a paper on Jugular Compression, A Possible Adjunct in the Treatment of Neuro-Syphilis.

The thousand dollar prize given each year by the American Association for the Advancement of Science "for a notable contribution to science" was awarded at New Orleans on January 1st to Dr. Carl Caskey Speidel, Professor of Anatomy, of the University of Virginia Medical School, for his studies of living nerve fibers.

Dr. C. C. Speidel presented his work on The Activities of Ameboid Growth Cones, Sheath Cells and Myelin Segments, as Revealed by Prolonged Observation of Individual Nerve Fibers in Living Frog Tadpoles before the George Washington University Medical Society on January 16th.

At the meeting of the University of Virginia Medical Society on January 18th the following program was presented: Observations on Maternal and Fetal Inter-relationships, by Dr. Corey; Recent Advances in Adrenal Physiology, by Dr. Britton; and The Clinical Use of Cortico-adrenal Extract, by Dr. Flippin.

News Notes from the Duke University School of Medicine and Duke Hospital.

On January 8th, Dr. George E. Bennett, Professor of Clinical Orthopedics at the Johns Hopkins University School of Medicine, lectured at the Duke Hospital on Recurrent Dislocations of the Shoulder Joint.

On January 15th, Dr. E. V. McCollum, of the Johns Hopkins University School of Hygiene, lectured before the North Carolina Section of the American Chemical Society, on The Chemical Background of the Science of Nutrition.

On January 23rd, Dr. Elliott P. Joslin, Clinical Professor of Medicine, Harvard Medical School, and of the New England Deaconess Hospital, in Boston, will lecture at the Duke Hospital on The Modern Treatment of Diabetes.

Dr. Oscar L. Hite

Announces the opening of his office in Professional Building, Richmond, Va., for the practice of gastro-enterology and allied subjects. Dr. Hite served an internship at Tucker Sanatorium, this city, following his graduation from the Medical College of Virginia in 1929. After that, he had a residency in medicine at Lenox Hill Hospital, New

York City, specializing in gastro-enterology, under Dr. Max Einhorn. For the past six months, he has been working with Dr. William Gerry Morgan, Washington, D. C.

Married.

Dr. John Breckinridge Woodville, Jr., Lansing, W. Va., and Miss Bobbie Lee Walters, Stony Point, Va., January 13th. Dr. Woodville is an alumnus of the Medical College of Virginia.

Dr. John Braxton McKee, Winchester, Va., and Miss Ruth Loraine DeBussey, Detroit, Mich., January 1st. Dr. McKee is an alumnus of the University of Virginia and recently located in Winchester after completing special work at the New York Post-Graduate Medical School and Hospital. He is a son of Dr. and Mrs. Thomas K. McKee, of Smyth County, Va.

Dr. James Alfred Gooch, and Miss Lelia Watkins Stacy, both of Richmond, Va., January 4th. Dr. Gooch graduated from Medical College of Virginia last June at which time he accepted an appointment to the State Hospital at Hazleton, Pa.

Joins Staff of Gill Memorial Hospital.

Dr. John A. Pilcher, Jr., of Roanoke, Va., formerly a house surgeon in the Eye Department of the Bellevue Hospital, has located at his home in Roanoke and is a member of the staff of the Gill Memorial Eye, Ear and Throat Hospital. Dr. Pilcher is a graduate of the Medical Department of the University of Virginia and served an internship in the Church Home and Infirmary, Baltimore, Md. Later, he did special work in bronchoscopy at the University of Pennsylvania under Dr. Chevalier Jackson.

Dr. Tiffany J. Williams,

Professor of obstetrics at the University of Virginia, has been appointed by Dr. I. C. Harrison, president, as a member of the Maternal Welfare Committee of the Medical Society of Virginia.

Staff Officers of Petersburg Hospital.

At the annual meeting of the Petersburg, Va., Hospital Staff, early in January, reports were made on the work of the hospital during the past year, and the retiring chairman, Dr. Wright Clarkson, discussed the work of the staff as a whole. Officers elected for the ensuing year are: Chairman, Dr. Herbert C. Jones; vice-chairman, Dr. E. W. Young; secretary, Dr. Leta J. White; vice-secretary, Dr. H. M. Snead; member of medical committee, Dr. George H. Reese.

Dr. Robert L. Payne,

Norfolk, Va., was the invited guest of the George Washington Medical Society, Washington, D. C., on the evening of January 16th, at which time he addressed the society on "The Advantages and Disadvantages of Surgery and Radium in the Treatment of Uterine Fibro-myomata."

Additional Clinics Opened by New York Polyclinic Medical School and Hospital.

In order to handle the increasing number of patients applying for treatment, it has been necessary to open additional clinics in Obstetrics and Allergy at the New York Polyclinic Medical School and Hospital. The clinic in Obstetrics is held three times a week and the Allergic clinic daily.

The Eastern Section Meeting of the American Laryngological, Rhinological and Otological Society was held at the New York Polyclinic Medical School and Hospital on January the 9th. Dr. Edmund Prince Fowler, of New York City, presided.

The Clinical Society of the Polyclinic held its stated meeting on the evening of February the 1st. At this time, a paper on Duodenitis illustrated by lantern slides was presented by Dr. Edward Leland Kellogg; one on Some Pathological Lesions in Sudden Natural Death by Dr. Thomas A. Gonzales (invited guest); and a paper on Esophageal Stenosis illustrated by motion pictures and lantern slides by Dr. Chevalier Jackson (invited guest). Discussion was opened on this last paper by Dr. Harlow Brooks, following which there was a general discussion. Supper was served upon completion of the scientific program.

Dr. R. W. Browne,

Who was formerly on duty with the U. S. Public Health Service at Norfolk, Va., has been transferred as Medical Officer in Charge from the Veterans' Administration Hospital, Walla Walla, Wash., to Veterans' Administra-

tion Hospital, Bronx, New York. Dr. Browne has continued his membership in the Medical Society of Virginia since the time he was located here.

A Suggestion.

Why not take this and all other copies of the MONTHLY home, that your wife may see it? Each month the Woman's Auxiliary to the Medical Society of Virginia publishes an interesting Department in this journal which should be of interest to all the ladies in your family. Ask them to look for it and see what other doctors' wives, mothers and daughters are doing as members of the Auxiliaries. We hope you may develop the habit of taking your copy home.

Accidental Injuries of the Eye, the Chief Cause of Blindness.

According to Mr. Lewis H. Carris, Managing Director of the National Society for the Prevention of Blindness, in a recent address, there is reason to believe that accidental injuries of the eye now constitute the greatest single cause of blindness. An analysis of eye injuries during the last six years, as prepared by Dr. E. B. Patten, of the New York State Department of Labor, shows a more or less steady increase in the number of permanent total disability and permanent partial disability cases, from 2,247 in 1925 to 3,200 in 1930. A similar situation is revealed in Pennsylvania.

However, tremendous progress has been made toward eradication of ophthalmia neonatorum—long the leading cause of blindness; the incidence of eye diseases generally has been greatly reduced through preventive and curative medicine and surgery; and, of course, great strides have been made in the correction of visual defects, in the elimination of excessive eye fatigue, and in the promotion of general hygiene.

Dr. E. C. S. Taliaferro,

Of Norfolk, Va., attended the North Carolina, South Carolina, and Virginia Sectional Meeting of the American College of Surgeons, at Greensboro, N. C., on January 28th-29th, and made an address on "What Can We Do for Far-Advanced Carcinoma of the Cervix?"

Dr. W. M. Junkin,

Of the class of '25, Medical College of Virginia, now practicing in Elkins, W. Va., has been elected secretary-treasurer of the Barbour-Randolph-Tucker (W. Va.) Medical Society, for the present year.

New Staff Officers at Winchester Hospital.

At its annual meeting in January, Dr. Emmert C. Stuart was elected president of the physicians' staff of Winchester, Va., Memorial Hospital, succeeding Dr. Robert M. Glass, who served in that capacity last year. Dr. B. B. Dutton was elected vice-president, and Dr. J. E. Harris was re-elected secretary. All officers are of Winchester. All local physicians and surgeons are members of the staff and doctors of nearby Virginia and West Virginia counties are courtesy members.

Conquering Infant Mortality.

Of every 1,000 babies born alive in the United States sixty-four died in 1930 before completing the first year of life, according to provisional figures of the United States Census Bureau for the birth-registration area of the United States exclusive of Utah. This area now covers all of continental United States with the exception of South Dakota and Texas and includes approximately 95 per cent of the country's population. This American infant-death rate, while nearly twice that of New Zealand—which holds the world's record for a low infant mortality rate—is lower than in previous years. It represents a decrease of thirty-six per 1,000 since 1915, the year in which the birth-registration area was established in this country. At that time the rate for the ten states which kept accurate birth records was 100 per 1,000 live births. Similar improvements in the prevention of deaths among babies are indicated by official reports from many foreign countries, eight of which had lower infant mortality rates than the United States in 1928, the latest year in which figures for at least twenty-six countries were available.

Compared with previous centuries, the decrease in infant mortality rates all over the world is strikingly illustrated in a recently published book by Dr. Ernest Caulfield entitled "The Infant Welfare Movement in the Eighteenth Century." In it he calls attention to the impressive decrease in the deaths of young children in England. Official English reports of deaths for the twenty-year period following 1730 are quoted as indicating that 600 out of every 1,000 babies died before the

completion of their second year of life, and 750 died before the completion of their fifth year. For the twenty-year period around the beginning of the nineteenth century these deaths had been reduced so that of every 1,000 children born, 300 died before they reached the age of two years and 410 children before the age of five years.

Knighthood Conferred on Dr. Henry S. Wellcome.

In recognition of his generous support of medical research, Dr. Henry S. Wellcome, president of Burroughs Wellcome & Company, of London and Washington, was knighted by King George and his name included in the New Year's Honors List.

Dr. Wellcome is of American birth and is widely known in the United States. For years he has been recognized as a leader in research in medical science, and is now serving as the Honorary President of the American Pharmaceutical Association.

Dr. John R. Garrett,

Roanoke, Va., has just recovered from his second automobile accident in two years, both of which laid him up for two months, in addition to keeping him in the hospital for a time.

Dr. D. Lane Elder,

Hopewell, Va., has been elected district trustee of the Kiwanis Club of that place for the present year.

Schools for Negro Blind Children.

The U. S. Children's Bureau, Washington, D. C., announces that a list of 15 schools for Negro blind children is given in the September issue of the *Teachers Forum* for Instructors of Blind Children. Ten of the schools are under the same management as schools for white blind children; five are entirely separate institutions. These schools are situated in States containing large Negro populations.

The Richmond (Va.) Ophthalmological and Otolaryngological Society,

At its recent annual meeting, elected Dr. W. R. Weisiger president for the coming year. Dr.. T. E. Hughes was elected vice-president and Dr. R. W. Vaughan, secretary-treasurer. The society is composed of the eye, ear, nose and throat specialists of Richmond and meets monthly for scientific discussions.

Dr. Parker Better.

As we go to press, we learn that Dr. William H. Parker, of Richmond, Va., is very much better. He was taken to a local hospital on January 22nd as a result of injuries sustained in an automobile accident, when he lost control of his car which plunged down Libby Hill in this city, near Twenty-ninth Street.

Dr. George H. Snead,

Of Richmond, Va., sailed early in January for Vienna and Budapest *via* Hamburg. After several months of studying, Dr. Snead will tour the Continent before returning home.

Dr. William Price Bittinger,

Summerlee, W. Va., an alumnus of the Medical College of Virginia, was recently elected secretary-treasurer of the Fayette County (W. Va.) Medical Society for 1932.

Dr. Stuart McGuire,

Richmond, Va., has been appointed a member of the Richmond Public Library Board, to fill a vacancy caused by expiration of service.

Half Century of Service Celebrated by New York Post-Graduate Medical School and Hospital.

The anniversary dinner of the Faculty Association of the New York Post-Graduate Medical School and Hospital, held at the Hotel Biltmore on Saturday evening, January 30th, marked the rounding out of a half century of service by this pioneer institution of graduate medical education in the United States. The speakers were Ray Lyman Wilbur, Secretary of the Interior; Nicholas Murray Butler, President of Columbia University; and Dr. George H. Meeker, Dean of the Graduate School of Medicine, University of Pennsylvania.

Will Speak Before Norfolk County Medical Society.

Dr. John Cooke Hirst, of Philadelphia, will give an illustrated lecture before the Norfolk County Medical Society on February 22nd, at 8:00 P. M. His subject will be "The Relation of Certain Pelvic Abnormalities to Remote Complaints." As is usual at these scientific sessions, any member of the State Society will be welcome.

Appointments of Physicians in the Medical Reserve Corps.

First Lieutenant Wyatt S. Beazley, Jr., Med. Res., and First Lieutenant Joseph A. Gallant, Med. Res., both of Richmond, Va., have been appointed to the 41st General Hospital, in the capacity of Medical Ward Officers.

Dr. James L. Hamner, Mannboro, Va., has also been appointed a First Lieutenant in the Medical Reserve.

Surgeon-General Hugh S. Cumming,

Of the U. S. Public Health Service, addressed the Richmond Chapter of the University of Virginia Alumni Association at its monthly meeting on January 6th. Dr. J. Shelton Horsley introduced General Cumming.

Hourly Nursing Service.

The Private Duty Nurses Club of Richmond, Va., announces the inauguration of an Hourly Nursing Service, in which its members are subject to call for service in all branches of the work that can be adequately performed in the home, at the following rates: $1.50 for first hour or less, and 50 cents for each additional hour or fraction thereof.

The Club realizes that due to the present economic situation there is a pressing need for a service of this kind in Richmond, which has heretofore been furnished only by the I. V. N. A. The adoption of a similar movement will render a distinct service to the people who do not care for or cannot afford a full time nurse. It will also help to solve the unemployment situation among the members of the Private Duty Nurses Club.

For information, dial 3-1656. (*Adv.*)

Location Wanted.

Middle aged, active doctor will appreciate information leading to good opening to practice medicine. Address "M.", care this journal. (*Adv.*)

Locum Tenens.

Doctor of ability desires to do relief work for one or more months. Address replies to No. 329, care this journal. (*Adv.*)

Obituary Record

Dr. James Benjamin Abbitt

Died at his home in Norfolk, Va., January 12th, from a heart attack, though he had been in bad health for several years. He was a native of Appomattox and was sixty years of age. Dr. Abbitt graduated from the Medical College of Virginia in 1901. At the time of his death, he was surgeon for the Norfolk and Western Railway and the Virginian Railroad. Dr. Abbitt had been a member of the Medical Society of Virginia for thirty years. His wife and two daughters survive him.

Dr. Lorrimer Fauntleroy James,

Well known physician of Richmond, Va., died December 28th, from an infection of the heart. He was fifty-eight years of age and graduated from the Medical College of Virginia in 1895. Dr. James practiced medicine in the counties of the Eastern Shore of Virginia and at Hopewell, Va., before returning to Richmond, his native city. He had been a member of the Medical Society of Virginia for twenty-five years. His wife survives him.

Dr. Giles Burneston Cook,

Front Royal, Va., died at a hospital in Washington, D. C., after a long illness. He was fifty-four years of age and a graduate in medicine from the George Washington University in 1903. Dr. Cook had been a member of the Medical Society of Virginia for some years. His wife survives him.

Dr. Roscoe C. Carnal,

Who was located and practiced in Virginia for several years, died in Pulaski, N. Y., January 13th, from injuries received when he fell from a second story window in his home, to which he had gone for air on account of feeling sick. He was forty-seven years of age and a graduate in medicine from the University of Maryland in 1905. After leaving Virginia he was engaged in institutional work in New York State until recently when he entered private practice. He had continued his membership in the Medical Society of Virginia since his residence in this State. His wife, neé Miss Bessie Blanton, of Ballsville, Va., and infant daughter survive him.

Dr. Charles Miller Hatcher,

Presidio, Texas, died December 27th. He was forty-three years of age and graduated from the Medical College of Virginia in the class of '17. Dr. Hatcher was formerly of Lynchburg, Va. His wife survives him.

Dr. George S. Watkins,

Oxford, N. C., died November 18th, at the age of fifty-three. He was a graduate of the former University College of Medicine, Richmond, Va., in 1900.

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One of a series of messages in the *Saturday Evening Post*, the *Literary Digest* and other magazines, setting forth some of the accomplishments of Medical Science in the diagnosis, treatment, and prevention of disease.
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NEGLECT IS YOUR HEALTH'S WORST ENEMY

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All he can do is to wait for your summons.

He is prepared, not only to help those who are actually ill, but also to prevent illness in those who are apparently well.

Why call upon him NOW? Here are reasons:

1. Millions of men and women are well, but not so well as they might be. You may not actually be sick but at the same time you may not be enjoying buoyant health. An examination by your family doctor is the best possible way to get the utmost out of your good health possibilities.

2. Physically and psychologically, you are an *individual.* A health examination will enable your doctor to learn your constitution, temperament, and tendencies. If you should become ill, this knowledge will be of great help to him. The more he knows about you the more he can help you.

3. You probably have certain weak spots in your health-armor. Your doctor can find these spots and strengthen them *before* disease attacks you.

4. Disease germs are everywhere. You can't avoid contact with them. But your doctor can take certain steps to protect you against contagious diseases.

5. You may have a number of fears about your physical health which are real to you, but which your physician may prove actually baseless. Many of us make ourselves ill by useless worry.

Neglect is your health's worst enemy. The most important step in the battle is to go to your doctor before he has to come to you.

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MORAL SUBNORMALITY AS AN EXPRESSION OF MENTAL UNSOUNDNESS.*

O. B. DARDEN, M. D., Richmond, Va.

Within this classification I am including that large group of people who are unable to make a satisfactory social and economic adjustment in the world, as evidenced by some conduct disorder. Eventually, these people become problems for their relatives or for their respective communities. In many instances the conduct problem becomes so grave that the offenders are hailed into court as criminals.

Inasmuch as these people are morally irresponsible, such treatment at the hands of the public is both wrong and dangerous from the viewpoint of the psychiatrist. Not only is punishment unnecessary, but it may lead to a permanent unwholesome attitude on the part of the patient, with continued antisocial conduct that defies correction and eventuates in a well-defined criminal career. Therefore, we, who are constantly called upon to deal with such situations, believe that something constructive may be gained in the proper handling of such people, and it is this fact, I think, that justifies this paper.

From the medical viewpoint, the vast majority of people with conduct problems can be placed in two large groups: Mentally subnormal and psychopathic personality states. I shall discuss these two groups separately.

The Mentally Subnormal

Mental defectives are classified as idiots, imbeciles, and feeble-minded, depending upon the degree of the mental enfeeblement. It is obvious, therefore, that these terms are used to designate a difference of degree in the same condition. "Mentally defective," a general term used to include all grades of mental subnormality, is often loosely applied to those who are obviously below the normal level. Feeble-mindedness, although a general term, and literally including the same large group, is usually used to designate a more limited lack of mental development, and since the use of the psychometric tests have been in general use, is particularly applied to those with an intelligence quotient from 40-70. This group includes a rather wide range of mental enfeeblement, and is, therefore, subdivided into smaller classes according to mental capacity. There is still another class of patients that fall within this group that I shall designate as border-line or mentally subnormal. While these patients do not fall within the feeble-minded group, yet they do not have the mental requirements of normal people.

Of course, I realize that our measuring rod for the determination of normal mentality is quite elastic and I realize that the term itself denotes a relative state rather than a well fixed and exact condition. At the same time there must be certain rather well-defined criteria for fixing a mental state we think of as normal.

We know that the primary function of the central nervous system is to bring about a satisfactory adjustment of the individual to his environment. Organisms which have few and simple relations with the environment can adjust themselves to only a small range of external conditions. The more highly developed organisms, however, which have many diverse relationships, can utilize an extensive series of possible adjustments. It is this function of the highly specialized nervous system in man that so readily differentiates him from other animals. This function of the nervous system is represented by the reactions of the organism-as-a-whole. Psychology is, therefore, a study of the tendencies of the whole individual as expressed in the psyche, or the functions of the individual or, as has been expressed, of the total reactions of the individual, in distinction from physiology which deals with

*Read by invitation before the Fourth District Medical Society, at Rocky Mount, North Carolina, November 10, 1931.

only the functions of the several parts, or of the individual organs of the body. Let me emphasize, if you please, that psychology deals with the individual as a whole, with total reactions. Therefore, just as in determining the normal mentality, we must consider the total reactions, so in considering abnormal mentality a similar study must be made.

It is beyond the limitations of this paper to discuss the normal mentality, but I shall call your attention to a few of the more outstanding requirements.

In childhood, obedience and respect for parents, with average progress in school, are well known criteria. Later, normal ambitions appear with a sincere effort to reach a definite goal. At the same time certain well-defined behavior characteristics are considered, as well as stipulated emotional reactions. Law and conventional rules, to a large extent, require a rather exacting social adjustment, even at the expense of repression of instinct and inherited traits. It will be noticed that this crude outline includes intellectual capacity, the emotional status and behavior standards as outlined by our cultural and social concepts. Thus it will be seen we are making a complete survey of the individual's natural equipment and are considering no part of the organism alone.

Not infrequently a patient is seen, about whom it is said there is nothing wrong except some particular conduct disorder. A detailed account of the patient's life, necessarily obtained, for the most part, from a relative, often fails to disclose but one gross defect. But upon further questioning and with a painstaking and tedious search for further evidences of deviations, other suspicious manifestations may be obtained. At other times the examiner must reach his conclusions solely from his own study and observations. Sometimes this may be due to wilful deception, or to reluctance on the part of the family to divulge a real situation, while perhaps just as often it is done with absolute ignorance of the patient's condition. Not only is such an attitude often adopted by the family, but occasionally the referring physician may corroborate such a history and concur in the belief that the patient has only some trivial conduct disorder.

Recently a patient was admitted to the sanatorium for alcoholism. The brother stated that the patient had an excellent mind and was a splendid salesman; that if he would just leave whiskey alone he would be an outstanding man. A detailed study of the personality of the patient revealed, however, that he was intellectually well below the average intellectual level; that he had no ambition; that he had never manifested any sense of responsibility for his family, and that he had little appreciation of his proper relationship to society. In other words, compared with his brother, he was lacking in man-stuff. He was genteel in appearance, wholesome looking, affable in manner, and ordinarily he moved about in the world as normal. In the sharply circumscribed activities of a stereotyped clerkship his behavior justified such a judgment of him.

More frequently than is suspected, perhaps, a personal catastrophe serves to reveal as a causative factor fundamental abnormality or lack of capacity. I recall, for example, a middle aged man who had lost the greater part of his fortune in an effort to establish a banking and brokerage firm. Following this unsuccessful business adventure, he traveled extensively. Finally he was brought into the hospital submerged in alcohol. Examination revealed in this man a total lack of those qualifications that go to make up a normal individual. His judgment, for instance, was immature; his sense of responsibility was inadequate; he had never been actually productive, and he could not live within the conventional rules of society. This man might have occupied, with some degree of comfort and success, a small niche, with limited, but well-defined duties, but he was inherently lacking in the capacity for adjustment in any large sphere.

Threats of suicide, empty perhaps, but alarming to his family, sent another man into the sanatorium. He had never accomplished anything worthwhile, but his brother, who was ambitious for him, had tried time and again to evolve him into a productive citizen. But ultimately, when the patience of the family had become exhausted, and spending money was refused him, he flew into a rage and made kindling wood of much of the household furniture. Such a destructive outburst of behavior, followed by threats of suicide, precipitated his prompt admission into the hospital. A comprehensive study of this patient revealed the emotional immaturity of childhood and equally defective judgment. His threats and destruc-

tive behavior were childish tantrums, staged for the purpose of cowing and dominating his family. He probably had no idea of terminating his life. His family was advised to avoid overloading him mentally and to deal understandingly with his feelings.

Naturally you are wondering: Why attempt to classify such conditions? What can be done for such individuals? Indeed, you may ask whether such behavior problems come within the domain of medicine. Not only is the care of this type of individual a medical problem, but it is a social and an economic problem as well. Many patients, both in private and in public institutions, fall within this category. It must be remembered that such individuals much more infrequently than normal persons become actually insane. But, in an insane asylum they are at least safe. Unguided and uncontrolled out in the world, they become the victims of those who use them and of their own unrestrained instinctive urges. They often disseminate venereal disease and constitute bad companions. The first problem is, therefore, to recognize these abnormalities early. When and how can this be done?

I believe that the most useful function of the State Mental Hygiene Clinic will be to detect such conditions. It must be borne in mind that when such children are looked upon as normal they necessarily must grow up in the environment of normal people and live with normal people as competitors in their activities. That is, obviously, unfair and unjust, and must prove to be disastrous to the subnormal. They cannot make a satisfactory social and economic adjustment in such an environment. As they grow older in years they fail in accumulating helpful experience and they become the hopeless victims of their own incapacity. Before their experiences have led them into paths from which they cannot be led backward, preventive medicine must discover, then estimate their capacity, prescribe their mental pabulum, and discover or prepare those niches into which they will individually fit. It is during the school age or even during the pre-school age, that they can best be studied and understood. A particular sort of work, suitable for the temperament and personality make-up of the individual, must be found, and no attempt must be made to push the child beyond his intellectual capacity. Often it happens that the ambitious parent wishes something better "for my boy" or "my girl," but intellectual capacity and personality, and not birth nor parental ambitions, pattern one's life. When this simple, fundamental fact is recognized and when we become willing and competent to provide for the subnormal such mental alimentation as they will ingest, and can digest and assimilate, then I believe we will have gone far into the field of another sort of preventive medicine. Every problem child is a not-understood child and should be studied by physicians trained in conduct disorders.

Psychopathic Personalities

Under the caption, psycopathic personality, is grouped a large variety of abnormalities of character. A detailed discussion is impossible here and a definition of a condition with such indefinite and broad limitations is very difficult. I shall, therefore, attempt to point out only a few of the salient features of the personality make-up of those falling within this group. White has very aptly decribed these people as "ill balanced, eccentric individuals who may be superficially brilliant but who lack continuity of purpose, and the capacity for the continuous expenditure of effort in any one direction." The crank, the pathological liar, certain types of swindlers, many juvenile delinquents, ne'er do wells, the black sheep of the family, the queer, eccentric person, the wanderer, the shiftless, often fall into this category. This group is composed of a vast reaction type, "from which criminals are recruited and which present to society some of the most difficult of its problems." From the foregoing it will be seen that the psychopathic constitution is made up of many abnormalities of character that lead to an inefficient type of adjustment of the individual to his environment.

A youngster long before he reached the age of nine years, kicked over the parental traces, and became wholly unmanageable. He would run away from home, roam the city, and supply himself as freely as if his purse were bulging with coins. He was constantly in every conceivable sort of mischief; his admission to the Sanatorium came as the result of a foolish attempt to hold up a store. He seemed to be utterly lacking in moral sense; he was wholly untruthful; he stole, swore, fought, was entirely unafraid and respected neither God nor man. He had been punished frequently and severely at home and had been taken repeatedly

to juvenile court, but no form of punishment in any way awed him or lessened his misbehavior. He is profoundly abnormal, congenitally so, wholly devoid of moral concepts, and if an adult would constitute a terrible menace to society. He has had to be permanently institutionalized.

A well-to-do real estate agent who had spent money liberally and lived in luxury was admitted to the hospital because of a violent emotional upheaval. The patient had been spending the money of others for his own pleasure and to maintain a high plane of living. He was looked upon as a criminal, but a complete diagnostic survey revealed a man of apparently splendid intellect but with a lack of normal moral fibre, an unstable emotional make up, and a complete lack of appreciation of his duties to his own character and to business associates, and to society. It is believed that this man could have filled, in admirable fashion, a position with less responsibility. He was a high pressure salesman, and was familiar with big business tactics, and gloried in the pomp and luxury necessitated by contacts with the financial leaders of his community. But temptation was too great for him. He was totally incapable of resisting the use of funds in his possession, just as long as final settlement was not near at hand. Had his position required a daily accounting, there is little doubt that he would be an influential citizen today, rather than an embezzler, on whom his creditors are seeking vengeance through the medium of the courts.

Punishment is probably without corrective influence in such individuals. Unaided and unguided they cannot live normally in a normal world, because they are not normal. It is not surprising that an inherent constitutional defect of character cannot be corrected by punishment. This type of law violator becomes a recidivist. He repeatedly suffers arrest and conviction, and the majority of the prison population are those who are sent back again and again. If such violators should not be sent to penal institutions, then, naturally, the question arises, what disposition should be made of them? Again, let me emphasize that we must adopt an understanding and a helpful plan in dealing with such folks. Condemnation has no value, but is hurtful to the defective and to society. First of all, an analytical study must be made of the individual. His characterological defects must be recognized and his motivations must be understood. In this way alone can an understanding of his problem be reached. And the longer the study is postponed, the more difficult is understanding. The older the patient, as a rule, the greater the maladjustment, unless some helpful influences have been provided. Here again the Mental Hygiene Clinic can do a great work by gaining the cooperation of parents in placing these unfortunate people in that environment best suited to their individual make-up. The family physician, above all others, is able to induce parents to have problem boys and girls properly studied to the end that they may be understood and afforded that care and guidance, without which they would become ever-lasting derelicts, a sorrow to their parents, a menace to society, and an economic burden to the State.

Westbrook Sanatorium.

THE PRACTICAL APPLICATION OF THE MODIFIED ASCHHEIM-ZONDEK TEST FOR PREGNANCY: DEMONSTRATION WITH TEST ANIMALS.*

WILLIAM K. LLOYD, A. B., M. D., Christiansburg, Va.

It is not the purpose of this paper to bring out any especially new or original ideas that may be applied to the various tests for the diagnosis of early pregnancy, but rather to attempt to show the falsity of the idea (which I believe still prevails in the minds of most physicians) that the test requires elaborate laboratory facilities; and to demonstrate that the test used may be employed to advantage by any general practitioner. Not even a microscope is essential. All that is absolutely necessary for a test is the suspected (voided) urine, a non-pregnant female rabbit over eleven or twelve weeks old, a hypodermic syringe and a scalpel (a pocket knife will answer).

Nor is there any intent on my part to present any of the boresome statistical data, in detail, on the efficacy of the test. Suffice it to say that the test is 99¼ per cent accurate, according to a summation of all results that I can find in the literature. There are men who have had 100 per cent accuracy. Eberson†, of San Francisco had such accuracy in 175 cases. His technique is to me rather compli-

*Read at the sixty-second annual meeting of the Medical Society of Virginia, in Roanoke, October 6-8, 1931.
†J. A. M. A., Vol. 96. No. 26. June 27, 1931.

cated. He uses white mice and concentrates the female sex hormone in the urine by a rather difficult process. He states that this method shortens the time in which he is able to make a diagnosis. Well, it does, basing the shortening in time on the original Aschheim-Zondek test, which required eight or nine days; but certainly the test is consummated just as quickly, if one uses the rabbit, which is certainly the animal of choice with me.

As Reinhart and Scott‡ point out, often a rabbit may be opened after twenty-four hours, show a positive reaction, closed again and live to undergo another test. They convincingly point out also the difficulty of obtaining white mice of the right age, et cetera, for the test.

Beasley§, using rabbits, reports 100 per cent accuracy in fifty-two cases, excluding five cases. In two of his cases the rabbits died before the test was completed; in two cases the animals were too young; the fifth case proved to be a woman carrying a foetus which had been dead for three or four weeks.

For years obstetricians and physicians in general have searched for a "sure-fire" way of diagnosing early pregnancy and up to a few years ago, all tests, while apparently seeming accurate for a short time, have later proven utterly without value, until Aschheim and Zondek* published their paper in 1928. They demonstrated the existence of a female sex hormone in the pituitary body and its presence in the urine of pregnant women. Their technique, while paving the way for later modifications, was tedious, eight or nine days being required for the test, and the use of immature white mice, four animals being required for one test. In addition, microscopical sections had to be made to prove the diagnosis. Now, in the rabbit, we have an animal, easy to procure, easy to handle in injecting the test urine, and easy to diagnose the positive or negative reaction by a glance at the gross appearance of the ovary.

In my rather limited series of thirty-four cases, the test has proved 100 per cent accurate, by later clinical observation; however the test was delayed in two cases, and required a second animal. One of these animals died from chloroform anesthesia while the injection was being given; the second, on undergoing a laparotomy, proved to be already pregnant. However, sufficient urine in each case was saved and used later on other animals with perfect results. In this connection, further explanation will be made below in the actual technique.

At this point allow me to give five distinct points of value of the test and cite one case out of my group to illsutrate each indication:

1. Differentiation Between Tumor and Pregnancy

Illustrative Case: Mrs. "R," age 32, para 3, no menstrual irregularities previously, missed four periods; she had nausea; the cervix was somewhat softened; and she even had soreness of nipples. She had an enlargement of uterus which, however, was not quite sufficient for a normal four months pregnancy. Three other physicians had told her they thought she was pregnant. She denied the possibility of pregnancy. The test was used. It proved negative; laparotomy was done and a submucous fibroid, implanted low, with a hemorrhagic area above was removed.

2. Diagnosis of Pernicious Vomiting of Pregnancy

Illustrative Case: Mrs. "B," age 24, nullipara, last menstrual cycle sixteen days previously, began vomiting, as if pernicious vomiting of pregnancy. Clinical examination showed nothing else to indicate pregnancy. For three days the various relief measures were adopted, glucose solutions intravenously, and by rectum. Urinalysis was negative except it showed a great decrease in amount, three to four ounces daily. Her loss of weight was extensive, fourteen pounds in four days. The blood pressure was normal. The test was used twenty days after her last period and eight days before the next expected; it proved positive: the uterus was emptied by therapeutic abortion and there followed an entire disappearance of vomiting.

3. The Pregnant Nursing Mother

Illustrative Case: Mrs. "C. B.," age 29, para 2, youngest child six months old, nursing. Patient had not had a period since birth of the child. Had early morning nausea, and the baby began to show gastrointestinal disturbances, with attendant loss of weight. Vaginal examination of the mother showed slight softening of cervix, no apparent uterine enlargement; other signs and symptoms of

‡J. A. M. A., Vol. 96. May 9, 1931. PP. 1565-1567.
§J. A. M. A., Vol. 96. June 27, 1931, P. 2234.
*Zondek, Bernhard, and Aschheim, Selmar; Klin; Wchnschr. 7: 1453, July 29, 1928.

pregnancy absent. Pregnancy was suspected, the test made proved positive and baby removed from breast. Mother and child are now doing nicely and the mother has since felt foetal movements and I have heard foetal heart sounds.

4. The Medico-Legal Aspect—Rape, Etc.

Illustrative Case: Miss "S," age 18, complained of rape having been committed on her ten days previously and two days following the last day of her last menstrual period. Examination by another physician proved rather negative, hymen almost intact. Eight days later the test was used showing a positive reaction and subsequent clinical observation has proven pregnancy.

5. Value for Advising Immediate Marriage in Early Pregnancy

Illustrative Case: Miss "A," 17, and Mr. "G," 23, young people of excellent social standing, apparently quite in love with each other, and already intent on marriage as soon as they could obtain their parents' consent, which had been refused. Had a "premarital accident," six days previously and one day after last day of girl's last period. I waited two weeks then used the test; it proved positive. Advice as to immediate marriage was given and followed and "I hope the couple will live happily ever afterward."

To these groups of indications, one will naturally add many others. These happened to be the outstanding five groups in my series. However, I would like to add one more large group, that vast horde of women everyone of us meets almost every day, that group who simply *want to know* whether they are or whether they aren't. We've all, I suppose, at least I have, stalled around with "you may be, I really think you are, but am not sure, no, you will really have to wait two or three months yet to be sure," etc., *ad infinitum.* Now we can say, "come back in two days and I will tell you whether you are or not."

Now about procuring the test animals. Any female rabbit over eleven or twelve weeks old that is not pregnant and that has been kept in a pen to herself for a week or more is all right. In June of this year when I first began using the test, I bought rabbits of this description from various outside sources. One rabbit, as I have mentioned above, proved at operation to be pregnant and of course made the test of no value. Others died (I imagine were sick when I got them) while being isolated in my pens waiting for a test; so, on learning the ease with which rabbits are raised and how prolific they are, I decided to put in my own backyard hutch and consequently I now know the sex, age, and condition as to pregnancy of my own test animals.

I hope the detailed information following will not bore you. It is prompted by the knowledge that in most papers I have read, on any subject, the author, while explaining the full merits, etc., of his paper, fails usually to give any concise information about just *how* to do what he has done. And, as I have stated before, my purpose in reading this paper is to demonstrate the practicability of the test to the ordinary practitioner.

I decided that since I was going to raise my own, I would get good stock. In July I ordered a trio of pedigreed Himalayans. I picked this stock for two reasons: first, they mature very early (ten to twelve weeks), and secondly, they are very hardy. There are several rabbit farms in the country. I procured my stock from Englewood Fur Farms in Missouri. The market affords any number of good books on how to breed and care for rabbits.

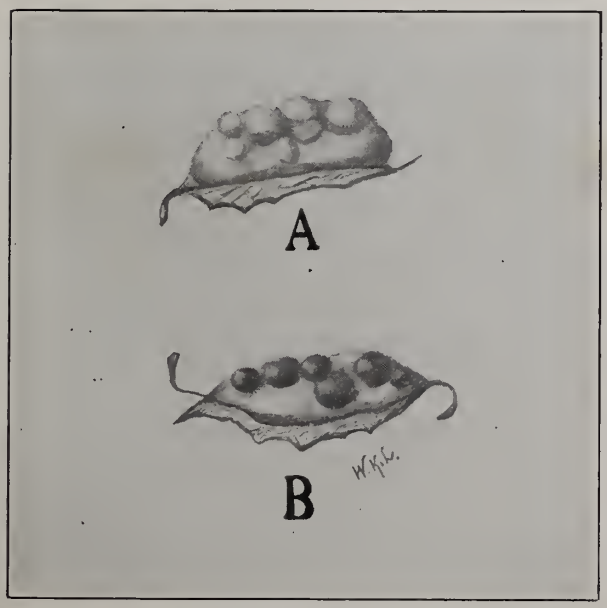
A word here about the rabbit that died while injecting the marginal ear vein under chloroform anesthesia. I believe the anesthetic entirely responsible for death. This particular rabbit was one in my early series and one bought from an outsider, a wild one. I have since learned that wild rabbits are too hard to manage, but at that time used them because I had none of my own. After having several to jump and twitch, causing the needle to slip out of the vein, I decided to try anesthetizing the animals even for the injection of the urine. I have long since given this up and rely entirely upon my assistant holding the animal still, which is experienced with no difficulty with the tame variety I now use. But, as a warning, if you want to save your animals for future use, I advise ether as an anesthetic which the rabbit takes very well, but not chloroform. It has long been known that chloroform is a dangerous anesthetic to animals, and I have found it so, particularly in dealing with rabbits. I have a live rabbit that has undergone three tests (author showed rabbit as Exhibit C), one negative and two

positive reactions. Ether anesthesia was used each time. The first test proved (after laparotomy) to be negative; the wound was closed and two weeks later a second test was positive; one ovary was removed and is the one exhibited marked "B." Two months elapsed, and again another positive reaction on laparotomy, the second ovary not being removed, and consequently, this animal is in the pink of condition for another test, having recovered from her former numerous operations and having one ovary still remaining. If you perform a laparotomy in twenty-four hours and obtain a negative reaction, you may use the animal again in two weeks; if, however, the reaction is positive you may use the animal again in two months, as even after a positive reaction the ruptured graafian follicles are absorbed in that time.

I my series I have followed closely the technique of Reinhart and Scott, of Columbus.

Technique of Injecting the Animal With Suspected Urine

I use a 10 c.c. syringe, being first assured of the fact that the voided morning specimen is acid. If alkaline, I add acetic acid till the urine is mildly acid to litmus. Use a small needle, 23 or 25 gauge, and without any anesthesia (I have found that an ordinary battery type otoscope held under the rabbit's ear, and the injection given in a somewhat darkened room, greatly facilitates the procedure), I inject 8 to 10 c.c. of urine into the posterior marginal vein of the rabbit's ear.



Exhibits A and B.

Technique of Operation

On the following day I do a laparotomy under ether anesthesia and, if positive, close the wound and diagnose the woman pregnant. If the animal lives I save it for future use. If on the other hand the test proves to be negative, I do one of two things, I either

Exhibit D.

inject 8 or 10 c.c. more of urine or simply wait another day and do a laparotomy, or necropsy as you prefer. If still negative I give a negative diagnosis. If positive and only a laparotomy is done and the animal lives, I save her for future use.

In determining the results of your test it is of course primarily necessary to be familiar with the appearance of the normal ovary of the rabbit. The mature rabbit's ovary presents a picture of ripe graafian follicles, varying

in number from three to nine, all of a pinkish color, and, if numerous, present the appearance of peas in a pod. Of course, if the suspected and injected urine of a woman who is not pregnant be used, the ovary will still present this appearance. If, on the contrary, the "peas of the pod" are dark red or almost black and very swollen, it means that the follicles have ruptured and, therefore, also means a positive test. After making a glance at a few gross specimens, it's simplicity itself.

Exhibit A is a normal (or negative) ovary of the rabbit. This shows unruptured but ripe graafian follicles.

Exhibit B shows six ruptured follicles and, therefore, a positive result. Incidentally, Exhibit B is an ovary from the live rabbit (Exhibit C) who has undergone three laparotomies, but still has another ovary remaining for another test.

Exhibit D is an example of a negative reaction with dissection to show ripe but unruptured graafian follicles.

Exhibit E.

Exhibit E is a rabbit, positive in reaction, showing ruptured graafian follicles. Incidentally, this is an embalmed animal which was used in the illustration of indication number "5" above, i. e., "value for advising immediate marriage in early pregnancy."

Summary

The female sex hormone is present in the urine of pregnant women. Its presence in the urine is demonstrable by causing changes in the genitalia of animals into whose blood stream the urine has been injected. The rabbit is the test animal of choice, first, because of the ease with which it is procured, and second, the fact that positive or negative reactions may be recognized in gross specimens instead of having to resort to frozen sections and the microscope. The test is 99.25 per cent accurate in a summation of various articles in literature and, therefore, has a definite place in the modern practice of obstetrics and medicine in general.

THE VALUE OF THE HORMONE TEST FOR EARLY PREGNANCY.*

WALTER B. MARTIN, B. S., M. D., F. A. C. P., Norfolk, Va.

The diagnosis of early pregnancy and the differentiation of pregnancy from other pelvic conditions has been made possible by the work of Aschheim and Zondek[1] and of Friedman.[2] In 1928 Aschheim and Zondek reported the result of their study on one thousand pregnant and non-pregnant cases with correct diagnosis of the condition in 98.2 per cent. Their method is based on the fact that the urine of pregnant women contains an increased amount of a substance similar in action to the anterior pituitary hormone and when such urine is injected into immature female mice rapid development of corpora lutea and corpora haemorrhagica follows. These results have been amply confirmed by other investigators, but the method of Aschheim and Zondek has not received widespread clinical application on account of the difficulty of maintaining a sufficient supply of mice. Each test requires the use of five or six female mice of a rather limited age variation. In an active clinic an enormous supply of mice would be required to make the test available at all times.

*Read at the sixty-second annual meeting of the Medical Society of Virginia, in Roanoke, October 6-8, 1931.

Friedman in 1929 produced rapid ovulation in female rabbits by the injection of urine of pregnant women. In each of eighteen rabbits injected with urine from pregnant women there was a prompt appearance of the characteristic changes in the ovaries. His control animals, fourteen in number, injected with urine from non-pregnant women, showed no changes. The advantage of this method over the original Aschheim-Zondek technique is obvious. The first test requires the use of five or six immature female mice three weeks old for each experiment and the result cannot be determined until after four days. Friedman's modification requires one female rabbit twelve to fifteen weeks old and the result can be ascertained in twenty-four hours. More recently Friedman[3] has modified his technique and instead of a single injection he now gives 4 c.c. of urine intravenously three times a day for two days and examines the rabbit's ovaries forty-eight hours after the first injection. By this method he has not encountered a single error in forty-five negative and forty-seven positive reactions.

Schneider[4] using the Friedman technique in twenty known cases of pregnancy obtained positive results in all of the rabbits injected. In twenty-five non-pregnant cases all were negative except five. These, however, were cases in which the urine was obtained twelve, eighteen, twenty-four, forty-one and sixty-seven hours after delivery. It is interesting to note how rapidly the test becomes negative after delivery. In twenty cases of suspected pregnancy Schneider also obtained positive results and the fact of pregnancy was later confirmed in each instance. In thirty negative tests only two proved to be incorrect. In these two cases rabbits only six weeks old were used. Subsequent test with twelve weeks old rabbits proved positive.

Reinhart and Scott[5] in one hundred and fifty clinical cases encountered only two errors in diagnosis. In one of these cases there was a possibility of error in collecting the urine specimen.

Magath and Randall[6] record eighty-six cases. Of forty-seven non-pregnant women all gave negative results but one. In this one instance a buck rabbit had by mistake been put in the cage with a female, probably accounting for the positive result. In thirty-eight pregnant cases positive results were obtained in all but one. A subsequent test four days later gave a positive finding in this case.

Beasley[7] reports on fifty-two cases of pregnant and non-pregnant women with a diagnostic accuracy of 100 per cent, after rejecting five instances for adequate reasons.

It is thus seen that the test possesses a high degree of accuracy both on the positive and the negative side. In my own laboratory twenty-five tests have been carried out on rabbits by the intravenous method. Rabbits twelve to fifteen weeks old are used that have been kept carefully separated from the males. A clean voided specimen of the night urine is used. Seven c.c. of this is injected into an ear vein of the animal. At the end of twenty-four to forty-eight hours the animal is sacrificed and the ovaries are examined for the presence of corpora lutea and corpora haemorrhagica. In most instances a twenty-four hour interval is sufficient but if there is no great urgency it is better to wait the longer period.

Of seven known pregnancy cases used as controls, all gave a positive response, while in four negative controls there was no deviation of the ovaries from normal. Five cases in which the diagnosis was uncertain and that gave positive response since have been proven clinically. In six other cases that came in for diagnosis the negative findings have also been confirmed by subsequent development. One negative and one positive case have not yet been proven. In twenty-four cases there are two instances in which the clinical data are not yet sufficient to confirm the laboratory findings. In the remaining twenty-two cases, ten negative and twelve positive, in each instance the laboratory findings have been borne out by clinical developments. A few cases will be briefly quoted to illustrate some of the problems encountered in the diagnosis of pregnancy.

Case No. 7—Girl, 14, unmarried. Both patient and family denied any possibility of pregnancy. Positive reaction confirmed clinically.

Case No. 12—Age 39, no pregnancy for thirteen years; missed two periods. Positive. Confirmed clinically.

Case No. 15—Known pregnancy, death of fetus suspected. Test positive. Subsequent course proved fetus to be viable.

Case No. 16—Question of pregnancy complicating acute appendicitis. Test negative. Operation, removal of appendix. Uterus a

little enlarged. Normal menstruation a few days later.

Case No. 19—Patient 46 years of age, youngest child married. Had not menstruated for four months and was sent to one of the local hospitals for operation for suspected ovarian cyst. Friedman test showed clear-cut positive result which was later confirmed by the clinical signs.

These cases are quoted briefly to illustrate some of the problems that confront us and illustrate the value of an accurate test for pregnancy. It is realized that the data submitted are too limited to draw definite conclusions but taken in conjunction with the accumulated work of others it serves to further confirm the clinical value of this method.

Conclusion

The method originally outlined by Aschheim and Zondek and as modified by Friedman for the diagnosis of pregnancy is a simple procedure, easy of interpretation, and of a high degree of accuracy.

References

1. Aschheim, Selmar and Zondez, Bernhard: *Klin. Wchnschr.* 7:1453-1457, July 29, 1928.
2. Friedman, M. H.: *Amer. Jour. Physiol.*, 90:617-622, November, 1929.
3. Friedman, M. H., and Lapham, M. E.: *Amer. J. Obs. and Gyn.*, 21:405-410, March, 1931.
4. Schneider, P. E.: *Surg. Gyn. Obst.*, 52:56-60, January, 1931.
5. Reinhart, Harry L. and Scott, Earnest: *Jour. A. M. A.*, 96:1565-1567, May 9, 1931.
6. Magath, Thomas B., and Randall, Lawrence M.: *Jour. A. M. A.*, 95:1933-1935, June 6, 1931.
7. Beasley, B. T.: *So. Med. Jour.*, 24:821-822, September, 1931.

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Discussion of Papers by Drs. Lloyd and Martin

Dr. A. H. Groseclose, *Roanoke:* Dr. Lloyd and Dr. Martin have told you about how simple and accurate the test is, but Dr. Lloyd has found another problem in working his test. He would like for some one who knows to tell him how he may know the sex of the rabbit before six weeks old, so he can kill off the bucks and keep the does. If someone can answer that question for him he will appreciate it very much.

For years back, people have tried to work out a "sure fire" test for pregnancy, and all the tests have been found to have some fault. It was thought when the sugar-tolerance test came out, that that was the test we were looking for. It has proved, however, that there are too many positive reactions in persons not pregnant, especially in males. On the other hand, a very recent report of two thousand cases of the Aschheim-Zondek test showed an accuracy of 98 to 99 per cent.

Of course, as Dr. Lloyd and Dr. Martin brought out, the rabbit test is much simpler than the original Aschheim-Zondek test.

One of the clinical conditions in which the determination of pregnancy is valuable is hydatidiform mole. In cases of hydatidiform mole the sex hormone is present in the urine in very high concentration; the concentration in the urine is much greater than in pregnancy. There is also found to be very high concentration in the urine in cases of chorioepithelioma. The test will remain positive until all the tumor has been removed.

One of the paradoxical questions is that the hormone appears much more concentrated in the urine than in the blood. In early pregnancy the concentration in the blood is very slight. This shows, possibly, that the hormone is secreted by the urine very rapidly.

Dr. J. Shelton Horsley, *Richmond:* These two papers are extremely interesting, and the application of these tests has been made in fields quite different. Dr. Ferguson, of the New York General Memorial Hospital, has used this test with considerable success in teratoma in males—teratoma of the testicle. As you know, this is an extremely malignant tumor and grows quite rapidly, so early diagnosis is extremely valuable. This test is used for the determination of the presence of teratoma, being embryonic structure. It is positive in a very high percentage of cases of teratoma of the male genitals. This teratomatous tissue produces the same stimulation to the anterior lobe of the pituitary body and consequently has the same hormone in the male as would pregnancy in the female.

Dr. Lloyd, closing the discussion: I think Dr. Horsley has brought up a very interesting phase of this subject, as has also Dr. Groseclose. Incidentally, the one that Dr. Horsley mentioned will not interfere with our modified Aschheim-Zondek diagnosis of pregnancy because this type of tumor only occurs in the male. I have not had occasion to use the test in that way, but I certainly shall do so in the first suspicious case I have.

I just want to repeat the request Dr. Groseclose made for me, and I am through. If any of you can find out how to tell the sex of the young rabbit at birth, so we can discard the buck and keep the doe, I should certainly be delighted to hear about it.

CANCER OF THE CERVIX: OBSERVATIONS DRAWN FROM THE STUDY OF ONE HUNDRED CASES TREATED WITH RADIUM.*

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Until the cause of cancer is discovered, its treatment will continue as it is, and always has been, purely empirical. In the meantime, while the scientists and laboratory workers are attending to this phase of the subject, is there anything that we the clinicians can do? It is because I believe that we can do a great deal that I have been actuated to present this paper.

The treatment of cancer of the cervix naturally divides itself into three phases, the Prevention, Active Treatment and After Care.

*Read before the Medical Society of Virginia at its sixty-second annual session, in Roanoke, October 6-8, 1931.

Prevention: What are the facts that lead us to believe that anything practical can be done in the way of prevention? In most large series of cases it will be found that about 85 per cent of these women have borne children. In most of these a tear in the cervix can be seen or felt. Where the disease is so extensive as to have covered it up, the presence of a tear can usually be logically inferred from an account of some one particular labor. I do not recall but one case of cancer of the cervix occurring after a surgical repair and that one was one of my own. I am convinced that the disease was present at the time of operation and the microtome blade missed it in the section chosen from the specimen. In all of our cases now we are asking the specific question: "Has a repair or cautery operation been done on your cervix since the birth of your last baby?" So far all have answered, "No." Bartlett and Smith,* in a study of cases treated at the Free Hospital for Women, Boston, make this significant statement: "Approximately 1,700 cervices were cauterized in this hospital, between 1914 and January, 1929. No one of these patients is known to have developed cervical carcinoma. Deep radial cauterization with the actual cautery is practiced and is fairly sure prophylaxis against malignancy." "Pemberton reports 5,962 cases in whom the cervix had been repaired or cauterized and only five subsequently developed carcinoma. Huggins reported 2,985 cases subjected to excision by the endothermic knife and in none of these did carcinoma develop."† In speaking of lacerations we mean trauma plus irritation and infection. Infection alone without the trauma is doubtless the predisposing cause in many cases. I think then it is fair to state that a large number of cancers are due to neglected tears, and that cauterization or repair of these will prevent the development of cancer in many cases. We will have to talk and preach more for the repair of such lesions. Women must be told the value of routine pelvic examination especially after they have borne children.

Women past the menopause should be advised to have periodic pelvic examinations. If we wait for hemorrhage, the earliest and often the only danger signal, too often we are too late. I have seen patients with cervices mere shells, all honeycombed with cancer, come in within a few days after the first spotting. If getting them early means anything, we cannot wait for blood. Prevention is the role of the propagandist, the exhorter. It is here that the organizations for cancer prevention can do a great work. For their work to be effective it must not promise miracles. It must be plain, fair, rigorously honest. It must be said in words that will bear endless repetition.

The Active Treatment: Now for the cases we have not prevented. There are three agents, the knife, the cautery and radium. Surgery contemplates just one thing, the removal of all the disease at an operation. Unless one believes that cancer at one time is a strictly local disease and that he has gotten the patient at that time, operation is entirely illogical except as a palliative measure. One should be able to remove all of the cancer just as one would cut the rotten spot out of an apple. When the last stitch is tied so far as surgery is concerned we have cured them or we have not,—that is all there is to it.

Many of you here remember the lectures of Dr. Hugh M. Taylor on surgery. With what gusto he quoted some leading light of that day, "Cut wide, cut deep, cut in the ebb tide of the lymphatics." You have got to cut deep to do a complete hysterectomy, and you can cut as wide as you please until you get down to the cervix where the disease is, and there the bladder in front, the rectum behind, and the ureters on either side just crimp your style woefully. Now for following the ebb tide of the lymphatics. It's a good sentence, a dramatic sentence, it has stuck in my ears thirty-five years and that's a good test, but I wonder what surgeons two generations hence will think of us with our big instruments, our bigger hands and poor inadequate eyes seriously attempting to follow those intricate microscopic spaces and trying to salvage the ultra-visible cancerous flotsam and jetsam left by the lymphatic tide!

The cautery, and I mean the hot iron, does what surgery does, that is removes the disease, but it also does what surgery does not do. It seals the lymphatics and blood vessels and sets up a terrific reaction for a greater or less area in the neighborhood of the growth, a local leucocytosis, what we believe to be a protective tissue reaction. Byrne taught us the value of the cautery and later Percy elaborated on it and made of the cautery operation

*Surgery, Gynecology and Obstetrics, 52: 249, February, 1931.
†Annals of Surgery, 94: 445, September, 1931.

a more definite surgical procedure. Had they treated all cases instead of just the advanced or inoperable ones their end results would have doubtless been more impressive.

Radium causes a slow destruction of the cancer cells at the point of application and affects profoundly the neighboring structures around a growth. It produces tissue reactions far more profound than does heat, for under its influence alone large masses of cancer tissue have been observed to melt away, and organs distorted by new growths return to their natural shape and size.

Only about six to eight in 100 cases as they come to us now are early enough for a radical operation with a reasonable hope of a good result. Personally, I shall treat these six or eight cases with a combination of the cautery and radium instead of hysterectomy. This group may lie in controversial ground, so it is to the other ninety-two to ninety-four cases that we now turn our attention. Dr. S. W. Budd and I have been working in close cooperation in these cases and many of the older ones were done by him. We first get a specimen of the growth for microscopic examination. This is examined and graded according to Broders. I have seen one case of tuberculosis, two cases of malignant granuloma, and one of simple adenoma excluded this way. Such errors if not detected would help one's statistics wonderfully, for they all get well.

We use the actual cautery for two reasons, to completely destroy the growth when possible, to seal lymphatics and blood vessels, and to provoke what we believe to be a helpful tissue reaction. When possible we do a cautery amputation. If there is a large mass of new growth, we remove as much of it as possible with the cautery, to get its bulk out of the way so that the radium can work higher up in tissue less deeply invaded. We give a general anesthetic the first time because we use the cautery and also in order to make a thorough pelvic examination to exclude any possibility of inflammatory conditions, such as pus tubes. We use the element (except in certain vaginal cases) in ampules and in needles. We give at least three treatments at monthly intervals using 1200 to 1800 mg. hrs. each time. We give as many more as may seem expedient. We take a careful history, the essentials of which are incorporated on a card which makes the whole picture easy of access. We use the body weight, the hemoglobin and the red cell count in conjunction with the local condition as a standard for comparison to note improvement or lack of it.

We believe that the surgeon, instead of performing an operation, must "take a case" just like the orthodontist or the orthopedist and either in close liaison with the family physician or alone see it through. It is bitter, pitiable, heart breaking work but some one has got to do it. We have tried in addition to studying the cancer to learn all we can about the patient who has the cancer, something about her social condition and her environment, something that might help in putting her in a group.

As to the local condition, we divide them into four classes which we designate A, B, C, D, and very similar to the classification used by the American College of Surgeons. Broders' typing has not helped us; both Grades II and III are better than Grade I. As to classification, A is but little better than C, B beats A by eleven points, all of the D's are dead, at least they run true to form. From these statements (a brief summary of the appended

Total number of patients studied	100
Number graded	33
Number classified	87

TABLE 1

	Dead	*Living*	*Total*	*Per Cent Living*
No. graded	14	19	33	
Grade I.	2	1	3	33%
Grade II.	3	7	10	70%
Grade III.	8	11	19	58%
Grade IV.	1	0	1	All dead

TABLE 2

	Dead	*Living*	*Total*	*Per Cent Living*
No. classified	47	40	87	
Class A	3	4	7	57%
Class B	6	13	19	68%
Class C	29	23	52	44%
Class D	9	0	9	All dead

TABLE 3

	Living	*Dead*
First year	12	36
Second year	4	7
Third year	3	5
Fourth year	2	2
Fifth year	5	2
Sixth year	0	1
Seventh year	1	
Eighth year	1	
Ninth year	3	
Tenth year	5	
Eleventh year	4	
Twelfth year	2	
Date of death not known		5
Total	42	58

tables) it will be seen that a study of the cancer itself and the extent to which it has become fixed upon the patient are not satisfactory bases for any conclusions. We got at times the most unexpected results, good when we least expected it, bad when we were most hopeful. Neither the kind of cancer nor the extent of invasion is enough.

We are going to study more thoroughly the arrested cases that seem well. I want to know if there are any common traits or characteristics about these people that may prove a clue to their resistance, something that would enable us to predict the outcome and to plan more intelligently and understandingly the subsequent management of that particular case. I used to think, when we had given the first full doses of radium, that we had finished, and when a break came six months, one year, or two or four years later, we were powerless to do any more. I have changed my mind about this. Some of these women by repeated timely radiations can be kept healed and comfortably at their work for years. I recall a big, handsome, blond woman with a growth filling the upper vagina, bleeding on the slightest touch. She was Grade IV and Class C. She lived five and one-half years and stayed at her work for all but the last six months. She was given in all six treatments, three after the first series, one after the first year, one after the third, and one after the fifth. The disease tended to remain local until the very end. Had she kept in closer touch, returning for further radiation at the very earliest sign of a break, I believe she would be living today. Had I been able in the beginning to identify her as one of a class who should be radiated periodically and done this, I believe she might have gone on indefinitely. She is just another example of an individual exhibiting a wonderful resistance. Whether it is expressed in terms of her sensibility to radium or a cellular self-help in resisting cancer, it amounts to the same thing. There is a key somewhere if we could only find it. Is there a group with common characteristics to which this woman belongs, something by which we could pick her out in the beginning and plan her whole course of treatment properly? That is what I believe we clinicians may be able to do if we stick doggedly enough at our task.

We have had but one death which might be attributed to the radium treatment itself. This woman was getting her second treatment. She had a severe local reaction and died suddenly of embolism of the lung six weeks after the treatment when she was believed to be safely convalescent.

Now let us turn to the results. I like the term arrested cases rather than cures. A person may truly be said to be cured of cancer when they live out their normal expectancy, die of something else, and a thorough post mortem fails to reveal any evidence of the disease. If the disease is arrested for five years we may begin to hope that it will not return at all. A glance at Table 3 will show that twenty-four of our 100 cases have passed the fifth year period and only three of these have died, two having completed their fifth year and one her sixth. How many will live out their normal expectancies I do not know. I think of them as arrested cases rather than cured cases. In my previous report in 1927, of the fifty cases in our series, seventeen had had their treatment five years or more. Of these seventeen, five, or about 29½ per cent, were still living. Today, out of one hundred cases, seventy have had their treatment five years or more. Of these seventy, twenty-two, or about 31½ per cent, are still living.

After Care: Now let us turn to the after care. If we simply tell these patients to go take douches, it saves a lot of trouble; but if we see them regularly, treat them through the speculum, help get rid of the sloughs, treat granulation tissue with the cautery or diathermy, dilate a stenosed cervix and let out retained secretions, use local applications of antiseptics, watch for bladder complications, accord pain a judicious helping, and above all give freely of helpful counsel and wise encouragement while watching for the first signs of a break, we will have done a great deal.

With all the many workers singly and in groups interested in this subject who are giving adequate treatment whether using surgery plus radium, the cautery plus radium, radium plus X-ray, or radium alone, the results run fairly parallel, somewhere in the neighborhood of thirty and seventy. It's startling, it looks like it's fixed, the cards are stacked, the house gets seventy and we take thirty. They run so close there must be a plan running all through it, if we could only get the key. We are not going to break the bank with any such system

but if we pry into every play and analyze it and set it down, with the same wheel, the same chips, and the same people playing, we may force the bank to lower the odds!

DIET IN DISEASE.*

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The subject of diet in disease, of course, is too extensive even to approach conclusion, but I want to take one disease later on and show by example the present day trend of well founded principles of the dietetic management of disease, and to show that the trained nutritionist or dietitian must take a major part in the education of the public in prevention of disease, as well as the treatment in accordance with these principles.

Food, from the apple of Genesis to our modern radio jingles, has attracted the attention of mankind, I believe, more than any other subject. The religionist, moralist, economist, scientist, physician, commercialist, faddist, charlatan, and quack have spent years of endeavor in seeking truth about food or the exploitation of food for gain, as the case may be.

The mention of food or diet to the American public stimulates mental generalities. Diet to the average laymen suggests a restriction of food intake given to a fat, furious, fair, feminine individual approaching a mature age; food brings to his mind those innumerable products so cleverly advertised in our monthly magazines with the aid of the commercial artist, or broadcast on the air in the various radio programs. Only too frequently these advertised foods state that there are specific nutritional qualities inherent in them, but expressed in such general terms as to leave one in doubt. Recently I glanced through a popular monthly and quickly noted ten nationally famous food products with the following therapeutic attributes attached to them: "substantial nourishment," "cleans the blood," "tones-up the system," "wake-up food," "aid to digestion," "contains many food elements the body needs," "balanced diet," "contains vitamines," and even such statements as "endorsed by 20,000 doctors," and "standard ration of the Red Cross." Dr. Morris Fishbein, editor of the *Journal of the American Medical Association*, has said that the influence of fashion doctors, once so powerful, fades into insignificance when compared to the self-appointed dictators who tell us what to eat. The problem of educating the people seems almost insurmountable, but I feel sure that what you and other serious workers in the nutritional field are doing will show its effect. Dr. Russell M. Wilder[1] in a recent address stated that, because of the glaring promises on the part of those exploiting food, "the profession is acquiring an antipathy to the subject of diet therapy, and many physicians, even some who know better, have been goaded into the display of actual hostility. The idea that ordinary, everyday folks are in any danger of vitamin or other deficiency is ridiculed; the increasingly probable condition of mild or incipient avitaminosis is rejected before the evidence is examined; the conclusions of the serious students of nutrition are ignored, and dietitians are denounced because of their efforts to put these principles into practice. I am convinced that physicians are more guilty than dietitians for the whole-wheat craze, and, as a class, are less likely than dietitians to be aware that the vitamins and minerals in the bran and germ of the wheat are obtainable in more digestible form and in larger amounts from other foods. Whatever our opinion as to the adequacy of general American dietaries, there can be no doubt of the importance of strict attention to nutritional principles when we are confronted with conditions that require dietary restriction."

I am sure, also, notwithstanding the tremendous influence of the commercialists, the pessimism of the medical profession, the too slow progress after earnest endeavors of the nutritionists and dietitians in spreading the gospel of correct dictary, that the efforts of those engaged in sincere and proper education about food and its application in disease, as well as in health, shall be of value.

The present trend of diet in disease is towards specificity of food both qualitatively and quantitatively. The empirical prescribing of diet can no longer attain any more than the empirical administrations of medicine. Both, of necessity, must be based upon a full knowledge of the underlying disturbed function and disturbed structure, that is, basic normal and abnormal physiology and pathology of disease. For centuries dietaries have been

*Address given at the Nutritions' Conference, Eastern Area, American National Red Cross, August 20, 1931, Washington, D. C.

inaccurately applied because of a lack of this knowledge. With modern advances in the science of medicine and its many branches, the science of nutrition has been born, and is likewise, I believe, gaining impetus in the search for truth. Chemical and biological methods have been applied to the study of diet in disease until now one can no longer admonish the sick in general terms of food.

A brief review of the work done in the dietary management of disease in the past quarter of a century will serve to show how more and more specific must be our advice in regards to food for the prevention and cure of these ills. The basis of the therapeutic management of gastric or duodenal ulcer, whether surgical or medical treatment is used, is still diet. The specific dietaries of Lenhartz and Sippy form the nucleus of dietetic management. In the food deficiency diseases, the work of Stepp, Funk,[2] McCollum,[3] Goldberger,[4] and others have taught us that certain foods containing the vitamines must be supplied; while education of the public as to what foods contain these substances must come from authoritative sources as the physician and nutritionist. Epstein[5] has shown us that we cannot give a diet in general terms in the nephritides, such as those low in protein content, but rather the contrary, since those low in this constituent may very frequently increase the edema, when high protein, low fat diet may be specific in the cure of certain types of nephritis. Norman M. Keith[6] and his co-workers have so specified foods in the management of the nephritides in their meticulous work at the Mayo Clinic as to make it comparable to the dietetic regime of the diabetic.

In the treatment of the functional gastro-intestinal diseases, including constipation, every conceivable form of dietary has been used, and still is advocated, varied in kind and quantity. The so-called smooth or bland diet, discussed at length by Alvarez[7] and accepted by most American gastro-enterologists, seems to be a rather specific answer to the problems of the functional dyspeptic in dietary management.

Diet in pernicious anemia now takes precedence over the older methods of the therapeutic management. The classical work of Murphy and Minot[8] in the dieto-therapeutics of the anemias tends to place specificity of food as a modern trend.

Other diseased processes, with our ever-increasing knowledge of them, are fast becoming amenable to diet therapy. Though not as yet judged as comparable to specific foods, a vast amount of data has been accumulated to show that many diseases are influenced to an extent by certain definite dietaries. Such disorders as obesity, dental caries, tuberculosis, the arthritides, acute febrile diseases, and epilepsy are holding the attention of the experimentalists, and tend to demonstrate definite response to various forms of instituted diet. Specific dietetic instructions in the expectant mother now hold a place equivalent in importance to the periodic examination advised.

Diet in diabetes exemplifies most particularly the specific response of disease to specificity of both qualitatively and quantitatively prescribing of food. Complaint has been made that the mathematical rigidity employed in dieto-therapeutics detracts from the art and romance in the healing of sick bodies, but the more accurate and the more rigid that diet is applied in the treatment of diabetes, the more entrancing and spectacular are the results. No where in medicine today do we have any more specific response to diet or any other management of disordered physiology and metabolism than in diabetes. This disease, as you well know, is a disturbance primarily of carbohydrate metabolism with secondary disturbances in metabolism of fat and protein. A quantitative readjustment of these food constituents, guided by a few basic principles, will bring about and maintain normal physiological body activities. The diet for the diabetic must meet successfully certain requirements as any other diet, namely, the maintenance of a given weight and provisions for growth (if a child) by means of sufficient caloric value; furnishing necessary energy for required activity; and by the nature of the illness, there must be a reduction in carbohydrate intake. The caloric requirements of the body vary with weight, activity, sex, age, and height, but let us say that 1,800 calories were the average requirements for adults. This amount must then be supplied through the intake of carbohydrate, protein, and fat. Carbohydrate intake, being limited by the nature of the disease, is determined by the individual's tolerance or ability to completely metabolize it. Protein intake has minimal intake requirement of .6 of a gram to 1 gram per kilogram body weight, with a

limited maximal intake because of the conversion of approximately 58 per cent of it into carbohydrate after ingestion. Fat intake is generally conceded to vary within definite limits of one to four grams per each gram intake of carbohydrate food. With these basic requirements clearly in mind, a dietary is founded for the diabetic. Since the discovery of insulin the carbohydrate intake may be definitely increased with a somewhat corresponding increase in both protein and fat food, but always keeping in mind the principles underlying the formation of the basic diet. When one considers the mathematical precision necessary in the evolution of the diabetic diet, scientific dietary seems to have been accomplished. The practical application of these apparent primary scientific principles in the teaching and education of the diabetic patient becomes the work of the consulting nutritionist, who, with a guiding thought of simplicity, must teach them with a language understandable to the lay public, and sufficiently acceptable to them to desire to carry out the prescribed program tending towards health.

In summary and conclusion, I have desired to show that the work of the nutritionist is approaching an accurate science, to be carried by them directly into the homes of the public, taught with precision, and substantiated by a knowledge of the underlying cause of disease and departure from normal.

Bibliography

1. Wilder, Russell M: The Significance of Diet in Treatment. *J. A. M. A.*, 97:435-436, August 13, 1931.

2. Funk, Casimir: The Vitamines, Williams and Wilkins, Baltimore, 1922.

3. McCollum, E. V., and Pitz, W.: The "Vitamine" Hypothesis and Deficiency Diseases—A Study of Experimental Survey. *S. Biol. Chem*, 13, 229, 1917.

4. Goldberger, J.: Pellagra and a Method of Prevention. *J. A. M. A.*, 66:471, 1916.

5. Epstein, A. A.: *Am. J. Med. Sc.*, 154, 638, 1917.

6. Keith, Norman M: Types of Renal Disease and Certain Therapeutic Suggestions. *Canad. Med. Assoc. J.*, 1928:18; 515-526.

7. Alvarez, Walter C.: Nervous Indigestion. Paul B. Hoeber, Inc., N. Y., 1931.

8. Murphy and Minot: Liver Diet in Pernicious Anemia. *J. A. M. A.*, 87:470-476, August 14. 1926.

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CHRONIC CERVICITIS AND ITS TREATMENT.*

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Dating from the writings of Noeggerath in the seventh decade of the last century, endocervicitis, with or without erosion, has been the subject of numerous papers and has continued to inspire complicating views especially concerning its gravity and treatment. The authorities of today are not all in accord on these points. In spite of the interest in this subject as shown by the continued flow of papers, chronic endocervicitis is still the mo t common of all gynecologic diseases. Hoenig states that this condition is so widespread that it may be truthfully said that more than 50 per cent of all women who have borne children, and many of those who have not, are afflicted with some degree of chronic endocervicitis. Strachan claims that the disease is to be found in 75 or 80 per cent of parous women and in 25 per cent of nulliparae. Moench claims that endocervicitis, salpingitis and even peritonitis are sometimes found in a virgo intacta. I agree with Strachan and Moench.

One wonders if at times a lack of proper consideration of some of the salient facts regarding the minute anatomy of the uterus and adnexa is not responsible for disappointments in the treatment of chronic endocervicitis and erosion.

Certainly there should be no failure to understand these facts and their significance if they are properly considered. The corporeal mucosa lacking the complicated character of that of the cervix and being protected by the barrier of the internal os is comparatively little susceptible to infection. The cervical mucosa is covered with high columnar epithelial cells and filled with innumerable racemose glands which extend deeply, even into the fibro-muscular tissue of the cervix, and open through narrow ducts on to the mucosal surface.

Obviously this structure is susceptible to infection which, once established, remains and progresses unless radically destroyed. Leopold's description of the normal uterine lymphatic circulation remains unchallenged. The uterine lymph current may be traced from its lacunar origin in the cervical mucosa and

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corporeal mucosa through minute funnel shaped ostia, directly to the myometrium. Here it branches into an extensive capillary net, which, spreading on the perimysium, penetrates and enmeshes every bundle and fascicle of the entire uterine musculature to its subperitoneal surface, whence it drains chiefly into two main collecting channels that course parallel to the uterine and ovarian blood-vessels at the base and top of the broad ligaments and partly into the lymphatics in the utero-sacral ligaments. The lymphatic capillary network over the corpus and cervix intercommunicate.

It is this lymphatic envelopment of the perimysial sheaths and the adnexa that determines the course of an infection from the cervical mucosa, not via the uterine cavity and tubal lumina (except in the case of gonorrheal and very rarely other infections), but along the intramuscular planes of the uterine walls through the broad ligaments to the tubal walls and the ovarian tunica albuginea as an ascending lymphangitis whose pathological trail will be marked by a few or all of the following:

1. Impairment of normal uterine contractions by infiltrating the myometrial muscle sheaths, thus causing stasis of the blood circulation, with dysmenorrhoea, menorrhagia and a sensation of weight in the pelvis and probably backache from increase in size and density of the uterus.

2. A lymphangitis of the bases of the broad ligaments, producing pelvic pains, tenderness and dyspareunia.

3. Lymphangitis of the utero-sacral ligaments, adding to the pelvic discomfort and the backache.

4. Pelvic cellulitis with its accompanying pain, tenderness and more or less fixation of the uterus.

5. Salpingitis which may be limited to the exterior of the tubes resulting in adhesions, kinking and possibly closure of the abdominal ostia, producing pain and tenderness in the lower quadrants of the abdomen or the infection may invade the lumen of the tubes.

6. The lymphatic infiltrate may thicken the capsular tunic of the ovaries, impeding the normal rupture of the graafian follicles with ultimate development of retention cysts, or there may be a frank ovaritis. Diseased adnexa are at times removed when a timely and radical treatment of the original focus in the cervix might have sufficed. Infection is the determining cause of inflammations of the cervix, though trauma may and often does play the role of a predisposing factor.

Chronic endocervicitis is seldom unaccompanied by so-called erosion. The squamous cells of the portio adjoining the external os desquamate, leaving a raw surface (true erosion). This is followed by attempts at healing. The columnar cells of the endocervix proliferate and cover this raw surface. Along with this change, glands characteristic of the cervical mucous membrane are formed in the diseased area on the portio. Following this the basal cells of the squamous epithelium surrounding this area displace the columnar cells, first as a thin layer, soon proliferating and growing over the ducts of the new formed glands, or growing downward into the ducts choking them, and by these two means forming the cysts so often seen on the surface of so-called erosions. As chronic endocervicitis is so seldom unaccompanied by disease of the portio and as a multiplicity of names is confusing and since only the microscope can differentiate several of the changes occurring here, I believe that Moench is right in suggesting the term cervicitis to cover all inflammatory changes.

Without referring again to all the symptoms of chronic cervicitis and its sequelae, I beg to emphasize dysmenorrhoea, menorrhagia, lumbosacral backache and persistent leucorrhoea. Every woman with leucorrhoea should be examined through a vaginal speculum.

Hoenig, in commenting on the dysmenorrhoea, remarks that the pain is in the early phase of the menstrual period and disappears when the flow starts freely.

There are other conditions that can often be charged to the account of chronic cervicitis, one of which is of particular gravity: sterility (Sturmdorf, Hoenig, Davis, Fulkerson and others); arthritis (Rosenow, Moench, Sturmdorf and others); carcinoma of the cervix (Hoenig, Davis, Matthews, Miller, Bailey, Strachan and others).

Fulkerson, who is very conservative, made a study of a series of cases and concluded that in 21.3 per cent of the women who desired children the sterility could be charged to chronic cervicitis. Miller, also very conservative, admits that in certain cases of arthritis the sequence of cause and effect is too clear

to be ignored. Ewing states that chronic endocervicitis precedes cancer of the cervix in the majority of cases. Mayo states that 60 per cent of the cases of cancer of the cervix is traceable to chronic endocervicitis.

In summing up the evidence against chronic cervicitis and charging the jury, I prefer to quote Miller verbatim. "It is likewise beyond dispute that any condition which can terminate as endocervicitis can, in pathology of the upper pelvis, in spontaneous post-operative and post-partum infections, or in systemic focal infections, and which has of itself the potentialities of a transition to malignancy, is not a disease to be ignored or to be regarded lightly."

The foregoing part of this paper has for its object emphasizing the seriousness of cervicitis and consequently the importance of radical and thorough treatment.

Many of the methods of treatment formerly employed have died of old age or inanition. Tampons, properly medicated, are still used to cleanse and lessen the congestion of the cervix, in preparing for the more radical measures. The methods of treatment that accomplish more or less good results are: radium, cauterization, surgery, diathermy—medical and surgical.

Radium is unsatisfactory. If sufficient irradiation is used to be certain of a permanent cure, the ovaries may be damaged.

Cauterization has given much satisfaction in the hands of many excellent surgeons. Its objections are the danger of stenosis, if the cauterization is sufficient to destroy the racemose glands, and a relapse or re-infection if all the glands are not destroyed.

Amputation of the cervix frequently fails to cure and, if done during child-bearing period, the objection to its use is obvious.

Trachelorrhaphy restores the anatomical outline of the cervix, but does not remove the infection.

I never saw chronic cervicitis permanently cured until Sturmdorf perfected and published his operation of removing a cone-shaped piece of tissue from the cervix, the base of the cone including the inflamed glands around the external os, the tip of the cone reaching to the internal os, thus removing not only the area of the so-called erosion, but the racemose glands in the cervical canal.

Medical diathermy has a very limited usefulness here. It may cure uncomplicated gonorrhoeal endocervicitis, but how many cases are cured before mixed infection is established? When mixed infection is established, medical diathermy is impotent.

A permanent cure of chronic cervicitis can only be attained by removing not only all visible diseased tissue, but the entire racemose gland bearing area surrounding the cervical canal.

The Sturmdorf operation involves hospitalization and considerable expense. Surgical diathermy can accomplish the same result without a general anaesthetic, with much less expense and usually with no confinement to the house.

Five years ago I began the practice of destroying by electro-coagulation, a more or less cone shaped piece of tissue in the cervix, the base being the diseased area around the external os and the apex approaching the internal os. At first the technique was more or less imperfect, and two or three treatments were required at intervals of three or four weeks before a cure was effected.

Now, one treatment is frequently sufficient. A second treatment is sometimes required to destroy the upper end of the gland bearing area. Not infrequently a second treatment is given solely to destroy more of the cervical tissue in the case of a large cervix, thus reducing the weight of the uterus. The indifferent electrode I use is one constructed for me. It has a copper core 9 inches long insulated by vulcanite. At one end provision is made for connection with a cord from the diathermy outfit. Attached to the other end is a piece of copper 1x3/8x3/16 inches, curved on the flat so it will fit in the utero-vaginal sulcus. The principle involved is borrowed from Doane's indifferent electrode used in his tonsil work.

One may use as an active electrode, any of the several made for tonsil electro-coagulation, provided the needle has a diameter of not more than 1/16 inch and not less than 1/32 inch, and also provided that it is insulated to within ¾ inch of its point.

After exposing and cleansing the cervix and its canal, the direction of the latter should be ascertained by a probe. The cervix and the canal should be anaesthetized by novocaine 2 per cent or nupercaine 1 to 500 applied on cotton, which should be left in place for ten minutes.

Plate 1 illustrates (A) how the needle is introduced at various points around the external os, and (B) pushed inward in such direction as to approach the canal near the internal os. The distance of the needle puncture from the margin of the external os must be determined by the size of the diseased area around the os.

When there is little pathology beyond the external os, the needle may be entered about 1/16 inch external to it and pushed in almost parallel to the canal. The needle should not be introduced near the outer border of the diseased area as a rule because, by so doing, the coagulation would extend outward further than necessary unless the cervix is very large. The distance that each path of the needle should be from its neighbor, in order to properly coagulate a cone of tissue, can only be learned by observation and experience.

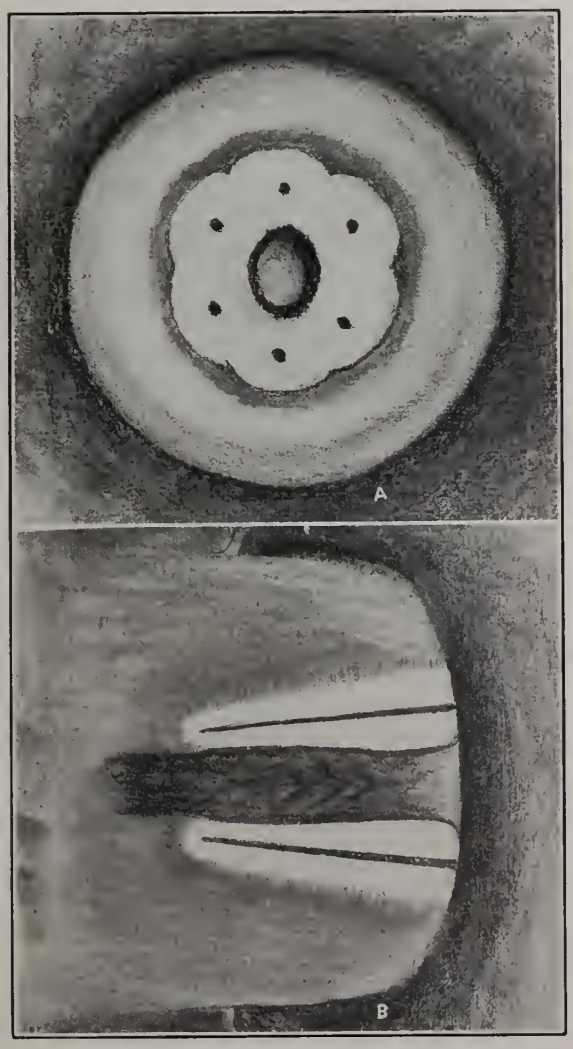

Plate 1 (Magnified).

The controls of the diathermy outfit should be adjusted so that the current will not cause rapid desiccation or charring of the tissue, thus stopping the progress of the needle. The latter should go in smoothly and quickly, requiring only two or three seconds. The needle should not be forced in for, if this is done, its direction may be altered and damage may result. While the dead tissue is being detached, the squamous epithelial cells of the portio proliferate and extend up into and finally form the lining of the new cervical canal.

Occasionally a small piece of the dead tissue becomes detached prematurely, causing bleeding, which may be persistent for a day or two. This alarms the patient unless prepared for it. She should be warned at the time of the treatment that this bleeding may occur and urged to come to the surgeon's office at the earliest hour possible after its occurrence. The offending point can be easily located and the bleeding stopped by touching the spot with a crystal or stick of silver nitrate or applying a well diluted Monsel's solution on a small pledget of cotton. The patient should be advised regarding the odor accompanying the disintegration of the coagulated tissue. This disagreeable feature can be very much minimized if not entirely avoided. The surgeon should apply hydrogen peroxide or perborate of sodium two or three times a week and the patient should use, once or twice daily, cleansing douches, being instructed to introduce the douche tip carefully otherwise bleeding may be started by prematurely detaching a piece of coagulated tissue.

I have never seen stenosis follow this plan of treating cervicitis. The resulting cervical canal and external os are usually about normal in size. To the palpating finger there is no evidence of scar tissue. A dogmatic statement that patients who become pregnant after this treatment are free, at the time of delivery, from any complications that may be charged to it would be premature in view of the limited number of post-treatment pregnancies on which I have been able to check. As the results have been uniformly satisfactory and as several cases cited in detail would make this paper, too cumbrous, the author presents just two illustrations, each demon-

strating a distinct type of cervical pathology with result of treatment.

Plate 2 shows gonorrhoeal cervicitis with mixed infection and real erosion in a young nullipara—(A) before treatment; (B) five weeks after one treatment, and at the present time. The patient was treated November 18, 1928.

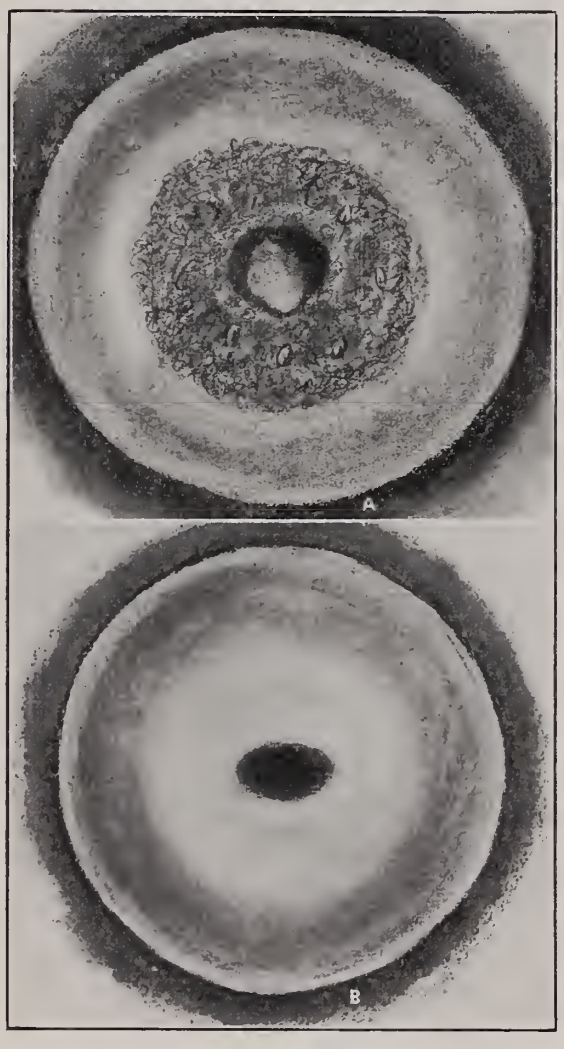

Plate 2 (Magnified).

Plate 3 shows cervicitis with multiple lacerations and numerous cysts in a field of so-called erosion—(A) before treatment; (B) five and one-half weeks after second treatment, and at the present time. This woman, a multipara, thirty-eight years old was treated on October 10, 1927.

As demonstrated in Plate 3, electro-coagulation enables one to take care of the irregularities on the cervix resulting from tears. Surgical diathermy for cervicitis was first used by Doyen in 1908. I do not know his technique.

Several American surgeons are using electro-coagulation in cervicitis. It does not seem to me that any, whose papers I have read, employ a technique that is sufficiently radical, except Mikels.

Plate 3 (Magnified).

References

American Journal of Obstetrics and Gynecology, 12: 374, September, 1926: Fulkerson.

American Journal of Obstetrics and Gynecology, April, 1926: G. L. Moench.

Journal of Missouri State Medical Association, 23: 242, 1926: Campbell.

Surgery, Gynecology and Obstetrics, 12:347, 1926: Davis.

Journal of American Medical Association, 87:1802, 1926: Matthews.

Wisconsin Medical Journal, 23:652, 1925: Davis.
Medical Journal and Record, 126:370, 1927: Hoenig.
Journal of American Medical Association, 87:1695, 1926: Miller.
Journal of American Medical Association, June 5, 1926: Davis.
Southern Medicine and Surgery, August, 1926: Ferguson.

412 *Medical Arts Building.*

TOTAL RUPTURE OF THE KIDNEY: REPORT OF CASES.*

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Prior to the advent of the automobile, injuries to the kidney were very uncommon. This is shown by necropsy reports, one series of over seven thousand autopsies showing only seven cases. However, since automobile accidents have become so numerous, more cases of ruptured kidney are being reported all the time. As the general practitioner usually sees these cases first, it is the purpose of this paper briefly to refresh your minds on the diagnosis and treatment.

The causative agents in rupture of the kidney may be classified as follows:

1. Those due to direct trauma, i. e., stab wounds, gun shot and other puncture wounds. This type of injury is rare.
2. Injuries from indirect force applied to the kidney region resulting in injury to that organ from contact with the vertebrae or ribs. This is the type of injury most often seen.
3. Muscular over-exertion, as in lifting or straining, has been reported as producing rupture of the kidney. This type probably had a pre-existing renal lesion.
4. Hydrostatic or spontaneous rupture of the kidney pelvis from over-distention during pyelograms or as a result of previous disease. This type is also uncommon.

The majority of cases reported have been in men, due to the larger field of activity of this sex. The right kidney is the one most frequently injured, due to the liver limiting its mobility. The kidneys, as well as other vital organs, are well protected by the bony encasement of the body; however, it is this protective bony framework that often produces the most damage to the kidney by having the kidney caught between the ribs and vertebrae. In one of the cases herein reported the kidney was completely torn into two parts by the fractured vertebral process. The kidney is more subject to injury than are the liver and spleen. The extent of the kidney injury may or may not depend on the amount of force and the manner in which it is applied, though cases are reported in which the trauma was very slight. The injury varies from a slight contusion to complete pulping of the kidney. True rupture of the kidney indicates that the pelvis has been involved and presents a grave picture. The rupture may assume a stellate appearance conforming to the embryonic lines of the kidney. One or both poles may be torn off and such injury requires a nephrectomy. In this study of five cases two were contusions or mild lacerations of the kidney, two complete rupture and the fifth a subcapsular hemorrhage. As a result of the hematoma produced from the torn vessel, a tumor forms in the perirenal area posterior to the peritoneum. This mass varies in size and may become infected, producing a perinephritic abscess. Several cases have been reported in which the peritoneum shared in the injury with fatal results.

The *symptoms* associated with this condition are shock, localized pain in the affected side, hematuria, tumor formation in the flank, renal ileus and rigidity of the muscles on the injured side. Bloody urine is the finding most frequently seen, occurring in about 95 per cent of the cases reported. If the ureter is torn across or obstructed by blood clots, hematuria may be absent. In the presence of frank rupture of the kidney, the absence of tumor formation should make one think of rupture of the peritoneum with the escape of blood into the peritoneal cavity. The pulse is usually fast and often thready, the skin cold and clammy, with an early subnormal temperature, which later becomes very high if infection occurs in the blood tumor.

Complications are often seen as a result of these accidents as one or more ribs may be fractured at the time of the injury and driven into the renal tissue. Among the other complications may be mentioned rupture of the liver, spleen and pleura. Hydronephrosis and movable kidney have been reported as not infrequent complications of this condition.

The *diagnosis* can usually be made from the history, a careful physical examination, X-ray

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and urinary findings. In the absence of a tumor mass and localized pain, a cystoscopic examination should be made, if the condition of the patient will permit it. By this method the source of the bleeding and the condition of the kidney can be determined. A retrograde pyelogram may be necessary to determine the exact pathology if bleeding is the only symptom present. Intravenous urography lends itself very well to the diagnosis of this condition, probably even better than the retrograde method, though of course it is contraindicated if the patient's condition is very critical. After two or three days the usual signs of sepsis may be seen if the renal pelvis is involved and infection of the hematoma occurs.

The *treatment* of rupture of the kidney may be divided into expectant and operative. The mortality in the cases treated by non-surgical measures is over 20 per cent. The treatment is determined by the amount of shock, pain and bleeding present. Conservatism should be practiced if the patient's condition warrants it. The temperature, pulse, blood pressure, red blood count and general condition determine whether or not operative interference is indicated. On exposure of the kidney one decides whether or not a nephrectomy must be done. In one of the cases herein reported the kidney was ruptured, but by packing the rent with gauze the bleeding was controlled so the kidney was not removed. In the other case the kidney was so badly destroyed and the pedicle torn that nephrectomy was required. If there is any suspicion of injury to the peritoneum, prompt exploration is indicated. Shock and loss of blood should be vigorously combated by a transfusion, hypodermoclyses and other supportive measures.

Case Report: L. J., age 34 years, adult, male, was admitted to the hospital November 20, 1929, at 12:45 P. M. *Chief complaint:* Pain in both wrists, back and abdomen with blood in the urine. *Past history:* Irrelevant. *Present history:* On the night of November 19, 1929, while walking through a building under construction, patient fell down an elevator shaft (about twelve feet) and landed on his feet with the body in extreme flexion. He was dazed at first and then managed to get to the street where he hailed a taxi and was brought to the hospital. On admission his pulse was 96; temperature, 99.8; systolic pressure, 106; diastolic, 62. He was in moderate shock. Dr. Claud was called to see him and made a diagnosis of bilateral Colles's fracture with possible internal injury. He was sent to X-ray and it was found that he had a fracture of both wrists. These were reduced by Dr. Claud under the fluoroscope. The transverse processes of the second, third and fourth lumbar vertebrae on the right were also fractured and an incomplete one of the third lumbar ventebrae on the left. There was some separation of the fragments of the second and fourth vertebrae on the right. The eleventh and twelfth ribs on the right side were also fractured.

Urinalysis at this time showed a large amount of blood, many leucocytes and epithelial cells. The blood count showed 15,000, leucocytes, 91 per cent polymorphonuclears, 9 per cent lymphocytes. The hemoglobin was 81 per cent, with 4,300,000 red cells. Severe pain was experienced in the right side and the presence of a gradually enlarging hematoma was noted. He was given 1,000 c.c. of normal saline solution by hypodermoclysis and other supportive treatment at this time. He was nauseated and vomited clear fluid several times. The mass in the right side continued to enlarge and there was a gradual drop in the blood pressure to 90 systolic. After a consultation the diagnosis was made of rupture of the right kidney and an immediate exploratory operation was decided upon. On exposure of the right kidney area a large hematoma was seen filling the entire right flank. A large mass of blood clots was evacuated, and on exposure of the kidney the upper pole was found to be completely torn off from the lower pole and pedicle. This was lifted out and the remainder of the macerated kidney removed. The patient was discharged from the hospital two weeks later with the kidney incision healed.

Case Report No. 2: N. W., colored, male, adult, aged 18. *Previous history:* negative. Twelve hours previous to examination he was struck in the left side by a rock, which knocked him to the ground. He was able to crawl home slowly after a short time and suffered severe pain in the left side, accompanied by the passage of bloody urine. He gradually became weaker, with persistent hematuria. On entrance, his temperature, pulse and respiration were 97-110-26, respectively. He was in marked shock, pulse weak and rapid. A cystoscopy

was done and catheters passed to each kidney. Bloody urine was obtained from the left side, while the right side was normal. An intravenous phthalein test showed the left kidney returned 50 per cent of the dye in fifteen minutes, with a normal excretion on the right. The blood count was 15,000 white cells, chiefly polymorphonuclear leucocytes. A large tumor was palpable in the left flank, very tender on palpation. An exploratory operation was done under ether anesthesia. On exposing the left kidney region, many blood clots were encountered, which were sponged out, revealing a large tear in the lower pole of the kidney, extending into the pelvis. The rent was approximated with mattress sutures and the site of rupture packed with gauze. The bleeding was thus controlled and the kidney space closed. He recovered rapidly and was discharged cured, four weeks later. The urine was normal and the patient felt well.

Summary

1. Traumatic injuries of the kidney are relatively infrequent as compared with injuries in other parts of the body. The relative proportion is approximately 1 to 1000.

2. A prompt and thorough examination, including cystoscopy, should be done in all cases, where injury to the kidney is suspected, in order to lower the mortality and reduce complications to a minimum.

3. Hematuria is the sign seen oftenest, though one or more of the classical signs may be absent.

4. The amount of trauma may bear no relationship to the extent of the injury, as complete rupture of the kidney has been known to follow simple injuries.

5. Complications include: Injury to the peritoneum, with rupture of the liver, spleen and, in many instances, fracture of one or more ribs.

6. In cases where one or both poles of the kidney are torn off, nephrectomy should be done to prevent exsanguination. General supportive treatment, including blood transfusion, is of much help in combating the shock.

7. Early exploration, with conservative surgery, offers the patient the best chance of recovery. This includes suture of the torn kidney, packing if needed for hemorrhage, together with drainage. The mortality where this has been done is low.

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HUNGER PAIN SYNDROME OF FUNCTIONAL ORIGIN AND ITS TREATMENT.*

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An effort was made several years ago by the author to determine the relative frequency of the hunger pain syndrome in a series of gastrointestinal and gall-bladder cases which had been operated upon at St. Elizabeth's Hospital. This analysis[1] of 160 consecutive clinical histories comprised forty-six cases of peptic ulcer, thirty-three of chronic cholecystitis, forty-seven of chronic appendicitis and thirty-four of combined chronic cholecystitis and appendicitis, all of which represented patients whose diagnosis had been verified at operation. In this study it was found that there was a definite history of food relief in 15.4 per cent of the chronic cholecystitis group, 17.5 per cent of those having chronic appendicitis, and 50 per cent of the peptic ulcer type. The age of the patient, duration of the illness, percentage of hydrochloric acid or roentgenologic studies apparently bore no relation to the incidence of this complaint.

This analysis of our own cases convinced us of the necessity of a more detailed study of all patients exhibiting this syndrome and gave us clearer indications for operative intervention. Since these results were published, the writer has been interested in another group in which hunger pains have been the predominating complaint. A typical history is as follows:

Case 1.—A physician, age 46, consulted us two years ago on account of epigastric pain. His present illness began several months previously, following a long period of intensive work. His abdominal discomfort was always aggravated by difficult consultation or mental strain, but was invariably relieved by food.

This cycle of events continued until he was eating practically every hour, in order to be able to continue his duties. He described his pain as being not only epigastric in location but there was also a diffuse abdominal cramp of considerable severity.

His physical examination was essentially negative throughout. There was no muscular rigidity but slight tenderness over the epigastrium.

Gastric analysis showed a definite hyper-

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chlorhydria but no occult blood was present. Cholecystogram was normal and repeated roentgenologic studies of his gastro-intestinal tract were negative with the exception of a pyloro-spasm and adherent appendix. A chronic obliterative appendix was removed, but for one year after the operation the same symptoms recurred whenever the patient was subjected to any unusual emotional strain. After general reconstructive measures referred to in another paragraph were adopted his digestive symptoms disappeared and he is now free of pain.

Case 2.—A man, age 33, was operated upon in 1927 for suspected ulcer because of his history of acute recurring abdominal pain, but only a chronically diseased appendix was found. His symptoms continued and he consulted us in September, 1930. At that time his examinations were negative with the exception of tenderness in his epigastrium and a hyperchlorhydria. Under medical regime he made an uneventful recovery and has continued well.

Case 3.—A tobacconist, age 39, gave a history of stomach trouble for ten years before presenting himself for examination in August, 1930. His chief complaint was epigastric pain recurring in the early morning hours or after mental fatigue, and was relieved by food or alkali. His office hours had been long and arduous with little opportunity for relaxation or exercise. During the past six months radical changes had been made in his business, which was a decidedly disturbing factor. His examinations were essentially negative except a hyperchlorhydria and a spastic pylorus. Following a change in his diet and daily regime and the administration of sedatives, he has made a satisfactory recovery.

Case 4.—A physician, age 38, began having hunger pains in September, 1930. Worry of any type produced epigastric pains which were relieved by food or soda. Complete physical examinations and laboratory studies were negative except an excessive amount of free HCl in his stomach and an irritable pylorus as demonstrated by roentgenological examination. For the last six months he has been symptom free and is apparently well.

This group of cases is presented to illustrate a type of hunger pain which closely simulates the ulcer syndrome, but apparently has no organic basis and is a distinct clinical entity. Its prognosis is different and its therapeusis calls for certain specific recommendations. The need for this differentiation is not purely an academic one, but its recognition places upon the physician a genuine responsibility. On the one hand, there is an imbalance of the vegetative nervous system with pressor preponderance and its attendant local and systemic disturbances. To this type of patient any operative procedure or even a prolonged ulcer diet would tend to aggravate rather than relieve his symptoms. On the other hand, a reversal of the treatment following an erroneous diagnosis is fraught with obvious consequences.

To what extent these two diseases are similar from a physiological standpoint may be surmised from the under-lying mechanism of hunger pains. For many years Haller's theory of the mechanical stimulation of the sensory nerves in the gastric mucosa was generally accepted. Even Pawlov supported this idea and based his assumption on the effect of wine as a hunger excitant. Subsequently, however, Carlson[2] demonstrated that the contractions in an empty stomach give rise to a sensation of hunger by stimulation of the sensory nerves not in the gastric mucosa but in the submucosa, and that the periods of contractions in the empty stomach are synchronous with the hunger pangs. Ordinarily the normal individual does not experience a definite discomfort when the stomach is empty but under varying conditions this sensation does develop into an actual pain.

Hughson[3] has shown that hyperperistalsis and pyloro-spasm may result not only from intra-gastric lesions but an irritation anywhere in the peritoneum will produce the same picture. He considers this due to the fact that there is a reflex arc of which the vagus nerve constitutes a part and impulses are carried through this reflex to produce a spasm of the pyloric sphincter and consequent delayed emptying of the stomach even though the gastric peristalsis may be stimulated.

The clinical application of Hughson's studies is that ulcer symptoms are due not infrequently not so much to the local effect of the lesion but to its influence on the reflexes governing the tonus of the pyloric end of the stomach. In those individuals whose nervous mechanism has become unstabilized by environmental factors, it is reasonable to believe that there is a

hyper-irritability of the reflex arc producing an effect similar to an organic lesion. We are familiar with a patellar clonus and other exaggerated nervous phenomena which not uncommonly have a functional background and are not always indicative of tissue changes. Following the pyloro-spasm there develops a gastric retention which in itself produces the hyperchlorhydria with its attendant symptoms. It is now known from experimental observations that when there is an obstruction of the pyloric end of the stomach either from an organic stricture or spasm, the prolongation of the contact of the food with the gastric mucosa causes the hyperacidity and is not the result of it.

The recognition of this pseudo-ulcer syndrome is important not only for prognosis but also for a proper therapeutic program. Such patients should be viewed as a whole and not only from the gastro-intestinal standpoint. A daily regime should be worked out for them including recreational as well as avocational innovations. In addition to a readjustment of the patient's attitude toward his daily problems, it is essential that the emptying time of the stomach should be increased by dietary and medicinal measures. Foods of high protein content and excessive condiments should be avoided, but strict ulcer diets do not seem to be necessary provided intermediate feedings are taken. Belladonna is a most valuable agent in overcoming the pyloro-spasm and, of the different preparations, bellodenal apparently gives the most sustained effect and satisfactory result. In addition to its active constituent bellafoline, it contains a moderate amount of luminal which adds to its efficacy. In some instances alkalis are helpful.

The discussion of this syndrome was provoked by the current impression that hunger pains are indicative of ulcer. Text books and many teachers in our medical schools are largely responsible for this half truth. In an effort to simplify diagnostic procedures, there has been a tendency to over-emphasize certain so-called classical signs or rule of thumb aids in the study of disease processes. For teaching purposes we are prone to dogmatize in the recognition of pathologic states and students are apt to carry over into actual practice some of these fallacies which we so frequently meet. It should be remembered that individuals vary widely in their response to the same physical handicaps, be it organic or functional, and no one symptom is always typical of any specific disease. As a matter of fact, it may be definitely stated that whenever a physical sign or symptom is classified as pathognomonic of a disease, it at once becomes a diagnostic pitfall.

Repeated emphasis should be given to the fact that hunger pains do not necessarily indicate ulcer but may be caused by any one of several organic lesions in the abdomen or may be a manifestation of a conditioned reflex of functional origin. By a more careful survey of patients giving ulcer-like histories a more intelligent therapeutic regime can be established.

References

1. Higgins, Wm. H.: Clinical Significance of Hunger Pains, *J. A. M. A.*, February 23, 1924, Vol. 82, pp. 599-601.
2. Carlson, A. J.: The Control of Hunger in Health and Disease. 1916.
3. Hughson, Walter: Reflex Spasm of the Pylorus and Its Relation to Diseases of the Digestive Organs, *Arch. Surg.*, 11:136-151, July, 1925.

Medical Arts Building.

GENERAL AND FOCAL SIGNS OF INTRACRANIAL TUMORS.*

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The subject of this paper was chosen, in spite of the possible danger that I would deal with a topic with which all of you were already far too familiar. However, I believe that, whether the physician is in general medicine or a specialty, an occasional brief review of the fundamental symptoms and signs found in intracranial tumors is helpful. Intracranial tumors all too frequently simulate other systemic lesions and, unless borne in mind, are frequently overlooked. If this discussion does nothing further than stimulate our diagnostic interest in intracranial tumors it will have served its object.

It is not the purpose of this paper to discuss in detail, either the physiology or the anatomy of the brain, but only to remind you that the brain is a highly specialized organ, whose functions depend on various centers, each center carefully joined to the other by association fibers; thus impairment of one center not infrequently calls for associated symptoms referable to another; each expanding intracranial lesion, therefore, shows not only

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general but focal signs. Whether the general or focal signs appear first depends entirely on the character and location of lesion; if the primary site of the tumor is near one of the cerebral centers, such as the motor, speech or sensory area, the focal signs appear very early, in spite of the fact that the lesion might be too small to initiate any general symptoms. However, if the primary site of the lesion is in the so-called, "Silent Areas," the general signs may be marked and definite for some months before a focal sign can be obtained. It is, however, the symptoms and not the signs of the intracranial lesion that bring the patient to us, and of all types of conditions from which man must suffer there is none in which the history is of more importance or more helpful than in intracranial tumors.

Headache is usually the first sign of increasing intracranial pressure and occurs at some period in intracranial tumors in well over 80 per cent of all cases. The character of this headache is variously described. In general it is dull, diffuse, and throbbing; it is usually constant but occasionally disappears for several weeks or months only to occur with increased intensity. It is frequently made worse by rapid motion of the head and in tumors of the posterior cranial fossa is often accompanied by a slight stiffness of the neck, leading us not infrequently to the belief that we are dealing with an inflammatory process, which is easily disapproved by the history and laboratory findings. The location of the headaches was formerly felt to be of great localizing value, but as more and more cases come to operation and as other more accurate methods of localizing lesions have been invoked, the general feeling today is that the location of the headaches is of little significance other than as a sign of an increasing intracranial pressure.

Vomiting is the second most frequent symptom of expanding intracranial lesions. It occurs in close to 60 per cent of all brain tumors, sometime during the course of the disease. It usually follows the appearance of headaches by a period of several weeks or months, depending on how rapidly the intracranial pathology is progressing, and frequently relieves the headaches temporarily. Vomiting in expanding intracranial lesions is rarely of the projectile type; in fact, in only eleven out of a hundred verified cases of brain tumor were Bowman and Smith able to elicit this symptom. My own observation has been that projectile vomiting occurs much more frequently in acute intracranial conditions, such as cerebral edema following concussion than it does in the slowly expanding type in which the cerebral fluid circulation has an opportunity to adjust itself to the pressure increase. One of the characteristics of the vomiting found in brain tumors is that it frequently occurs without nausea; its occurrence is irrelevant to meals or what has been eaten, and there is usually no gastric distress.

Visual Disturbance is a third most common symptom and coupled with headache and vomiting is a triad of symptoms that should immediately arouse suspicion of intracranial pathology. Visual disturbance is not infrequently the first symptom of brain tumor, especially if the lesion is pressing directly on the optic nerves as in pituitary tumors; usually, however, visual disturbance is a rather late symptom and has been preceded by a period of headache and vomiting. The disturbance noted is more often a result of general increased pressure with the resultant choked disc giving us constriction of the fields, increase in size of the blind spots, with occasional subjective phenomena, as light flashing before the eyes or a feeling of pressure on the eyeballs. At times bitemporal or homonymous hemianopsia is noted which is of localizing significance. True, visual hallucinations are rare but occasionally occur—in only one out of a series of a hundred cases did Bowman encounter this symptom.

Mental Disturbance is another symptom that should lead to a careful study for intracranial tumors as it occurs in from 35 to 40 per cent of all brain tumor patients. It is sometimes the initial symptom and may manifest itself as impairment of memory, drowsiness, disorientation or childishness. Impairment of insight and judgment is frequently seen and in some cases a complete change of personality results. The timid may become boisterous, the good natured quarrelsome or irritable, the cheerful may become depressed. This rapid mental change frequently leads to erroneous diagnosis of general paresis but this is readily corrected by clinical and spinal fluid examinations. The general consensus of opinion is that mental disturbance occurs earlier and is more marked in lesions of the

frontal lobes, especially the left, as this portion of the brain is that more recently acquired by man and is the center for higher intellectual thought. The mental disturbance is not characteristic in itself, but is another link in the chain leading to proper diagnosis.

Convulsive Seizures are found in practically the same proportion of intracranial tumors as are mental disturbances. The incidence is somewhat smaller according to Parker, but in any case well over 20 per cent of brain tumor cases show this symptoms. The onset of convulsive seizures in any patient beginning after adult life should lead us to suspect brain tumor. The seizures may be generalized, but the large percentage are of the Jacksonian type involving primarily one side or one extremity, sometimes being so mild that there is only a transient feeling of numbness and weakness of a hand or foot. After a short period, however, as more cerebral motor centers become involved, what was at the beginning of focal convulsion soon develops all the characteristics of a generalized seizure. A Jacksonian convulsion is of great localizing value anl shows definite irritation or pressure upon or near the contralateral motor area of the cortex. It is both a general and a focal sign. All epileptics should have expanding intracranial pathology ruled out before a diagnosis of idiopathic epilepsy is made. The neurosurgical staff at the Neurological Institute of New York were so impressed by their frequent finding of surgical intracranial conditions in epileptics that an encephalography is done routinely on all cases of epilepsy admitted to their service.

Dizziness is complained of by about 25 per cent of all brain tumor cases. It is found more frequently in lesions of the cerebellum or posterior cranial fossa, and indicates a lesion along the vestibulo-cerebellar pathways. It is not always a general sign of increased intracranial pressure, as cases with other signs of markedly increased pressure fail to complain of dizziness; however, it should be solicited carefully in any brain tumor suspect, especially as to the type and direction the dizziness is toward. We are familiar with the fact that patients with cerebellar lesions frequently fall toward the side of the lesion.

Blood Pressure and Pulse Readings are of little significance in intracranial tumors. They are, of course, of great moment in acute intracranial conditions such as hemorrhage or fracture but in slowly progressive intracranial pathology they are of no diagnostic aid.

Focal Signs: When the diagnosis of an expanding intra-cranial lesion has been made from the general signs and symptoms enumerated above, it then becomes encumbent upon us to localize the area of the brain in which the pathology is situated. This is frequently difficult and certain cases, even with the closest study, will fail to yield any evidence as to the exact location of the growth. In spite of the fact that one large neurosurgical clinic in this country claims that all brain tumors are localizable, my observation has been that neurosurgeons just as general surgeons have their proportion of negative explorations. Even with the improved technique of air injections with careful X-ray studies, errors of localization are made and will continue to be made at times in spite of every effort to the contrary.

While it is obviously impossible to consider all the focal signs of intracranial tumors in one paper, I will enumerate and discuss briefly the signs found more commonly. I consider hemiparesis the most common localizing sign of brain tumor. It is true that this does not localize the pathology definitely, but is often the first localizing clue to be elicited. The hemiparesis may be so mild that there is simply a slight exaggeration of the deep reflexes on the side contralateral to the lesion with a proportionate diminution of the superficial reflexes on the same side, that is, exaggeration of the ankle and knee jerks with loss or an inequality of the abdominals and cremasteric reflexes. There may be a slight loss of muscle strength present as shown by a weakened grip or a very slight tendency to foot drop. The Babinski reflex is commonly found with its confirmatories on the paretic side but is usually a late sign and is preceded by the other reflex changes, i. e. the exaggeration of the knee and ankle jerks and the diminished abdominals appearing earlier. When the Babinski is present it is, of course, very valuable and unmistakable. Facial weakness is also found on the paretic side and is of great value as a localizing sign. The weakness is on the side opposite the lesion.

The next most frequent localizing sign is the appearance of sensory phenomena. The signs of sensory disturbance occur as do those of the motor disturbance, on the side opposite the lesion and hemihypesthesia or hemianes-

thesia is the most common finding. The sensory impairment or loss extends as a rule from the forehead to the toes, giving sensory involvement to one-half the body, stopping almost exactly in midline. In cortical or sub-cortical lesions all forms of sensation are involved, heat and cold, pain, temperature, vibratory and position sense. Astereognosis is frequently found in which objects placed in the hand opposite the lesion cannot be identified by handling. This sign is indicative of parietal lobe involvement but is rarely found alone. The disturbances of sensation as mentioned above are earlier in appearance in lesions found subcortically in the area of the thalamus. Aphasia is another common and valuable focal sign and may be either partial or complete, motor or sensory. A combination of the two, that is, a mixed aphasia is the more common. This sign, of course, indicates temporal lobe involvement on the left side in right-handed individuals.

The motor and sensory changes mentioned above point to pathology in the cerebral cortex in the first and second cranial fossa. Tumors within the third cranial fossa give an entirely different group of signs. Here, beneath the tentorium, rest the cerebellum with the brain stem. Tumors of this region give more definite localizing signs than those further forward. Incoordination, ataxia, and dysergia are characteristic of cerebellar pathology as indicated by the Romberg sign, unsteadiness in walking, tremor and dysmetria in the finger to finger and finger to nose tests. The ataxia and incoordination are more marked on the side of the lesion in cerebellar pathology as are all the other signs, which is just the opposite to the condition found in cerebral lesions where the signs are on the opposite side. Unsteadiness in gait with the general signs of an intracranial tumor should at once arouse suspicion as to cerebellar pathology. Rapidly progressing deafness with unexplained tinnitus also points to lesions in this region, and with other signs of cerebellar tumor frequently indicates an expanding lesion of the cerebello pontine angle. Tumors found in this position are usually neuroma of the acoustic nerve.

Besides the eighth nerve all other cranial nerves are of importance as local signs of intracranial lesions. Absence of smell is frequently found on the side of the lesion in frontal tumors. Ocular palsies are frequently found, choked disc is a rule and is sometimes greater on the side of the lesion, acting in this case as a localizing sign. Disturbance of taste occurs at times and is of localizing value. Facial weakness has been mentioned and is of great significance. Disturbance of the 10th, 11th, and 12th nerves occurs frequently, especially in extensive lesions along the base of the skull and in those that involve the distal portion of the brain stem.

Among all localizing signs X-ray is one of the most valuable and all tumor suspects should have a routine skull X-ray. Sometimes calcification in the tumor shows its exact location. Anomalous cortical vessels may be brought to light, cortical atrophy may be present. Following air injections, distortion or displacement of the ventricles is frequently shown; dilatation is found at times. In fact, over 50 per cent of brain tumors show some localizable signs on X-ray with or without air injections by the cranial or lumbar route. While the value and importance of air injection is generally recognized in all clinics, it is a step that should not be undertaken until every available clinical method of localizing the lesion has been exhausted and the site of the tumor is still a questionable one. The too hurried use of air injections is to be compared with X-raying of the chest before the patient has been examined carefully with a stethoscope.

We could mention the variability of signs as shown by different types of intracranial tumors or various other phases of intracranial pathology that come under his heading; however, we believe that the axiom of diagnosing the tumor first, and worrying about the type later should apply in this case. We have not endeavored to name all or nearly all the signs, general or local, found in brain tumors, but have only touched briefly on those more commonly present. No brain tumor shows all the general or focal signs mentioned, some only a few, but there is rarely one that cannot be picked up if we search carefully along the general lines mentioned here. When we consider the fact that intracranial tumors are second in frequency only to those of the pelvic organs we are bound to realize our responsibility to our patients and to ourselves in regard to intracranial conditions.

In conclusion I would like to emphasize the fact that intracranial tumors are not rare; that they are frequently overlooked because

their possibility is not borne in mind; that, when they are present, they give definite and unmistakable general and focal signs, just as lesions elsewhere in the body.

References

1. Hugh Cairns: Observations on Localization of Intracranial Tumors, *Archives of Surgery*, April 1, 1929, Vol. 18, pp. 1936-1944.
2. Cushing, H: Note on a Series of Intracranial Tumors and Conditions Simulating Them, *Archives of Neurology and Psychiatry*, p. 605, December, 1923, Vol. 10, 668.
3. Kubitschek, P. E.: The Symptomatology of Tumors of the Frontal Lobe, *Archives of Neurology and Psychiatry*, September, 1928, Vol. 20, pp 559-579.
4. Elsberg, C. A., and Silberts: Changes in Size and Relations of Lateral Verticals in Tumor of the Brain, *Archives of Neurology and Psychiatry*, October, 1925, Vol. 14, pp. 489-501.
5. Cadwalader, W. B.: Significance of Jacksonian Epilepsy in Focal Diagnosis of Cerebral Lesions, *Archives of Neurology and Psychiatry*, September, 1925, Vol. 14, pp. 358-364.
6. Parker, Harry L: Epileptiform Convulsions: the Incidence of Attacks in Intracranial Tumors, from the Section of Neurology, Mayo Clinic, 1929.
7. Dowman, Chas. E., and Smith, W. A.: Intracranial Tumors, *Archives of Neurology and Psychiatry*, December, 1928, Vol. XX, pp. 1312-1329.
8. Davidoff, Leo M.: Brain Tumors, from *Psychiatric Quarterly*. Vols. IV and V, 1930-1931.
9. Wechsler, Israel H.: Text of Clinical Neurology, Part IV, 1930.

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PROBLEMS IN THE RELATION OF STREPTOCOCCI AND DIPHTHEROID BACILLI TO CHRONIC INFECTIOUS ARTHRITIS.*

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The report of finding streptococci in the blood stream in cases of Chronic Infectious Arthritis by Cecil, Nichols, and Stainsby[1] in 1929 stimulated an active interest in this subject. Shortly after the publication of this work the examination of blood cultures was begun in this laboratory.

The technic employed is essentially that used by these authors, which, in turn, is modified from that of Clawson.[2] In addition to the clot cultures made according to the method described in their work, a culture was always made by the inoculation of about 5 c.c. of blood directly into a bottle of beef heart infusion broth. In the first cultures made, about 20 c.c. of blood was used, but in the later cultures this volume has been increased to approximately 30 c.c. Thus there are now four bottles inoculated from each blood culture. One with about 5 c.c. of fresh blood and three with clots from tubes containing about 8 c.c. each.

The cultures discussed in this paper differ fundamentally from those described by Cecil in that they came from a number of different physicians. The selection of cases varies greatly according to the physicians making the selection, and as might be expected, the percentage of positive results occurring in a series from one physician is very different from that of another. The larger part of the cultures have been taken in this laboratory; a few by the laboratory staff at the home of the patients, and the remainder submitted by the physicians themselves.

Because of the fact that these cultures come from different physicians, only a limited attempt can be made to correlate laboratory results with clinical findings. Certain observations, however, from the laboratory standpoint alone seem justified.

The number of cultures reported here is considerably larger than that reported by some other observers who have been unsuccessful in confirming the work of Cecil and his associates. As will be pointed out later, a small series of cases might readily lead to erroneous results. Table No. 1 sums up the greater part of the work done in this laboratory.

Table I
Results of Blood Cultures Examined September, 1929, to August 15, 1931

	Positive	*Negative*	*Contaminated*	*Total*
No. of cultures	105*	604	41	750.
Percentage	14 0	80.5	6.1	100.0

*Streptococci 31
Diphtheroids 74

These findings seem to be explicable in only one of three ways:

1st. That the streptococci and diphtheroids are contaminations.

2nd. That these organisms are present in normal persons as well as in those having arthritis.

3rd. That these organisms are associated with the disease.

The first of these explanations has been advanced by Nye and Waxelbaum,[3] Dawson, Olmstead and Boots[4] and others, and has received much publicity. Their explanation, however, does not seem convincing. While it is quite true that the technic employed is in-

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volved and gives abundant opportunity for contamination, the contamination of more cultures by streptococci and diphtheroid bacilli in *pure culture* than by staphylococcus albus, for example, is, to say the least, a very remarkable coincidence.

Were contamination the answer, the question then arises as to how such contamination might occur. It would seem that if the streptococci were to be present as a contamination that the respiratory tract of the laboratory worker would be the most likely source. With this in view, a series of experiments was conducted.

A number of blood culture bottles which remained sterile after one month's incubation were used. These bottles were coughed into and the growth resulting examined. In the first place, it was found that these bottles were not so easily contaminated as might be expected, and that rather vigorous coughing was necessary in order to produce any growth. With each series that was coughed into a control culture of exactly the same kind was used and inoculated with a pure culture of streptococcus. The control cultures invarably showed growth.

Twenty-nine bottles were coughed into and examined after five days' incubation. Twenty bottles remained sterile and nine showed growth. In five of these a streptococcus was present but never in pure culture; two of these five also showed a diphtheroid bacillus. Staphylococci, as might be expected, were the predominating organisms in these cultures.

It has been suggested that the repeated opening of the blood cultures in the technic employed is a factor of importance in producing contamination. Unquestionably the chance of contamination is increased every time a bottle is opened so that the examination on which the organism was found has a decided interest. This is shown in Table 2.

TABLE II
SHOWING EXAMINATION ON WHICH ORGANISM WAS FOUND

Organism	*1st*	*2nd*	*3rd*	*4th*	*5th*	*Total*
Strep.	23	4	3	1	0	31
Diph Bac.	25	14	13	18	4	74
Total	48	18	16	19	4	105
Per cent	45.5	17.1	15.2	18.1	3 8	100

As seen in the above table, instead of each successive examination showing a larger per cent of positive results, the opposite is the case. More than 45 per cent positive findings were at the first examination, which was made four or five days after inoculation of the cultures; while only 3.8 per cent was found positive on the fifth examination which is usually made about thirty days after the inoculation of the culture. Likewise, it has been noted that distinct colonies are often to be seen on the surface of the blood clot, a phenomenon that would hardly occur were these organisms mere contaminants.

The original bottle (that is the bottle of medium inoculated directly with blood at the time of taking the culture and consequently not subjected to the handling given the clots) has revealed a diphtheroid in eleven cases, and a streptococcus four times. Contaminating organisms practically never appear in the original bottle, except when the whole culture is contaminated with a spore forming bacillus. When this does occur the syringe is generally suspected as the source of the contamination.

If the contamination theory is to stand, some more positive proof must be shown by its advocates. Such proof is at present lacking. Contaminations occur readily, especially in the first work that one does. In a preliminary series of 87 blood cultures not included in Table I, twenty-nine or 33.4 per cent were contaminated as contrasted with 5.5 per cent in Table I. Refinements in technic and increased experience are responsible for this great decrease. It is possible that the claim of contamination made by some is due to the fact that they did not advance beyond this preliminary stage.

The second possibility—that streptococci and diphtheroid bacilli are as prevalent in the blood of normals as in the blood of those having arthritis—is perhaps still open to question. In my own work the number of blood cultures from normal people, examined by the method described, is too small to be significant. Only fifteen cultures from normal individuals have been made directly for the purpose of determining this point. These have in every instance proved sterile.

However, in previous work[5] dealing with 822 blood cultures made by a different method but involving the use of a bottle of infusion broth such as was used in the present series of blood cultures, no diphtheroid bacilli were obtained and only seven cultures of streptococci. All seven of these cultures came from cases subsequently fatal. The blood cultures in this old series were collected almost exclu-

sively from acute cases in which typhoid fever or septicemia was suspected. Were the diphtheroid bacilli or streptococci "normal" inhabitants of the blood stream it would seem that they might have been picked up in some of these cultures.

However, more convincing than this, is the later work of Cecil, Nichols and Stainsby.[6] In their article they show a control series of 104 cases with only four positive blood cultures and each of these four cases demonstrated some suspicious symptoms. Twenty of these 104 cases were from absolutely normal individuals and no organisms were present in the blood from any of these cases.

In view of these observations it seems highly improbable that normal individuals harbor either streptococci or diphtheroid bacilli in their blood stream. If we discard this theory and that of contamination, we are left only the third possibility—that a direct association exists between these organisms and the disease.

This view seems the most reasonable and there is much evidence to substantiate it. The physicians for whom this laboratory has worked have found very close accord between their clinical observations and laboratory results. While true that negative blood cultures have frequently been obtained in cases that were clinically arthritic, in only rare instances has a positive blood culture been obtained where chronic infectious arthritis has not been definitely diagnosed.

As mentioned before, where cultures come from many physicians, clinical observations and laboratory results are more difficult to correlate than where all is under a unified control. Fortunately, however, a comparative study of the clinical diagnosis and blood culture findings in a series of sixty-two cases from one physician has recently been made possible.

TABLE III

No. of Cases	*Clinical Diagnosis*	*Blood Culture*
31	Typical Chronic Infectious Arthritis	17 Positive 14 Negative
7	Suspicious	7 Negative
13	Degenerative Arthritis	1 Positive 12 Negative
3	Subdeltoid Bursitis	2 Positive 1 Negative
1	Gonorrheal Arthritis	1 Negative
7	Negative	7 Negative

To consider the above figures from another standpoint. There were twenty positive blood cultures. Of these seventeen were from clinically typical cases, two streptococci and fifteen diphtheroid bacilli. The other three positive cultures were from cases not typically chronic infectious arthritis, but cases which might have had some infectious involvement; these were diphtheroid bacilli.

It may be noted in the above tables that diphtheroid bacilli have been found much more frequently than streptococci. As diphtheroid bacilli are far more widely distributed than streptococci, their significance in blood cultures must be seriously questioned. However, their persistence in these blood cultures, and their frequent occurrence in the original bottle suggests that these organisms are also associated with the disease and are not merely adventitious.

This observation also has confirmation in other work. While not attaching much significance to the diphtheroid bacillus, Cecil[1] does report finding them in both blood cultures and synovial fluid. Margolis and Dorsey[7] also report diphtheroid bacilli in both blood cultures and synovial fluid.

In our own work with synovial fluids covering ten cases, staphylococcus aureus was found once, a diphtheroid bacillus twice, and both a streptococcus and diphtheroid bacillus in one case. This latter will be discussed in detail later.

Mellon's work[8] in which he described a close relationship between certain strains of diphtheroid bacilli and streptococci seems to have a decided bearing on this work. Mellon's methods were employed, and after persistent effort, successful results were obtained and several of the organisms considered diphtheroid bacilli at the time of their isolation assumed a true streptococcic form.

Since this observation was made, all of the diphtheroid bacilli isolated have been so cultured, with the result that of thirty-six strains so far worked with, twenty-four have assumed streptococcic morphology.

This somewhat startling observation raises an entirely new question. Are these two organisms one and the same? If so, then it is entirely possible that the morphology of the organism as it is found in the blood cultures is dependent either upon some factor of resistance in the patient, as suggested by Koch and

Mellon,[9] or else upon some peculiarity in the particular batch of culture media employed.

The effect of culture media upon the morphology is well illustrated in the case referred to above, where both a streptococcus and a diphtheroid bacillus were recoverd from a specimen of synovial fluid. Several broth cultures inoculated with the fluid showed only a streptococcus in pure culture, while the blood agar plates inoculated at the same time and from the same fluid showed numerous colonies of diphtheroid bacilli and no streptococci. These colonies of diphtheroid bacilli when inoculated into serum-bouillon assumed streptococcic morphology after the first generation. On solid culture media, the diphtheroid form was retained for several months. Results practically identical with this were also obtained in a blood culture from a case of endocarditis.

The most logical explanation of this phenomenon would seem to be pleomorphism. However, there are several factors that stand in the way of this explanation. In the first place, while the change from the bacillary to the streptococcic form is easily carried out, sometimes in the first or second generation, we have never been able, even after repeated trials, to bring about the change from streptococcic to bacillary form.

Then again, where the two forms of the one organism have been successfully retained in pure culture and comparative fermentation tests made, these tests have shown a decided difference in results. The three examples given in the following table are typical of the many trials.

TABLE IV

COMPARATIVE RESULTS OF FERMENTATION IN STREPTOCOCCIC AND BACILLARY FORMS

Organism	*Dextrose*	*Lactose*	*Mannite*	*Salacin*	*Succrose*
S1 Diphtheroid	+	0	0	0	0
S1 Streptococcus	+	+	+	0	0
H1 Diphtheroid	+	+	+	0	+
H1 Streptococcus	+	+	0	+	0
H2 Diphtheroid	+	0	0	0	+
H2 Streptococcus	+	+	0	+	0

It seems from the above table that the diphtheroid and streptococcic forms differ in their fermentation reactions as well as in their morphology. Furthermore, limited study up to the present time indicates antigenic differences between the two forms.

Within the streptococcic group itself fermentation reactions indicate that these organisms fall into different groups rather than into one specific species. An examination of their hemolytic properties also shows a decided difference. A few strains are moderately hemolytic; some show a trace of hemolysis; while others, the majority, are non-hemolytic.

Agglutination reactions likewise indicate a lack of specificity. Attempts to immunize rabbits against the streptococcus and diphtheroid bacillus have not been as yet particularly successful. Type K1, however, has produced a strong agglutinating serum. This serum has agglutinated eleven strains but has failed to agglutinate nine other strains. Type H2 produced a fairly good serum which agglutinated K1 and also four other strains. Though limited, these agglutination tests indicate a number of different strains and not one specific variety.

The agglutination test with the patient's serum against Cecil's B4 (B13) has been tried in a number of cases and seems to have diagnostic value. A disturbing factor, however, is that in only two cases has the patient's serum even weakly agglutinated his own organism although this has been tried in twenty-three instances—seventeen of the twenty-three sera having agglutinated B4 in high titre.

While the agglutination test appears to have diagnostic value in chronic infectious arthritis, the claim that it is as dependable as the Widal test in typhoid fever does not seem to be justified. The agglutination test in typhoid fever may be made from a stable preserved antigen so that practically identical results are obtained in repeated trials. The agglutination test in arthritis, however, must be made with a living antigen which in my experience is variable. The same serum does not give identical results on different days, but may at times vary greatly. Consequently, I have found it advisable to try each serum two or three times before reporting the result.

Distinct serological differences between the "typical strain" B4 of Cecil, the K1 group mentioned above, and other streptococci isolated from blood cultures in this laboratory, demonstrates a distinct lack of unity among these streptococci.

DISCUSSION

This paper is to be regarded as a preliminary report. Even though a large series of blood cultures has been studied, a great deal more work is necessary to clear up the problems involved. However, the attempt of some to set aside the positive blood culture findings

as mere contaminations seems unjustifiable. Both the diphtheroid bacilli and the streptococci appear to be definitely associated with chronic infectious arthritis. It is entirely possible that the association may be secondary in character but there is ample evidence that such an actual association exists.

I believe that there exists a distinct relationship between the streptococci and diphtheroid bacilli isolated from blood cultures. There is strong evidence of this relation in spite of certain facts to the contrary. Work on these lines, however, has not progressed sufficiently to suggest what the character of this relationship may be. Diphtheroid bacilli, presumably in pure culture, may be changed readily in proper culture media to the streptococcic form, yet these two forms when grown side by side show differences in their cultural as well as in their morphological characteristics. Much work is needed to clear up this relationship, but in the meantime, diphtheroid bacilli found in blood cultures should be carefully studied and not regarded as merely adventitious.

My work indicates that there are several organisms involved and not one specific streptococcus. This, to me, is a perfectly logical conclusion that would also explain the previous apparent discrepancies by other investigators. The gonococcus has long been known to be the cause of an arthritis at times indistinguishable from the chronic infectious type.

It seems reasonable to look upon chronic infectious arthritis as a syndrome such as exists in pneumonia or meningitis. These diseases are definite infections though not of a specific nature. Either pneumonia or meningitis may be produced by many varieties of bacteria. Might not the same be true of arthritis? Might it not be definitely infectious though not caused in all cases by a specific streptococcus?

Grateful acknowledgment is made of the valuable aid rendered by Evelyn Fay Cox and Mildred E. Anderson.

References

1. Cecil, Nichols and Stainsby: *Arch. Int. Med.*, 43:571, May, 1929.
2. Clawson: *J. Inf. Dis.*, 36:444, 1925.
3. Nye, Waxelbaum: *J. Exp. Med.* 52:885, December, 1930.
4. Dawson, Olmstead & Boots: *Proc. Soc. Ex. Biol. & Med.*, 28, 419-420, January, 1931.
5. Straus: *J. Lab. & Clin. Med.*, 345-348, February, 1924.
6. Cecil, Nichols, & Stainsby: 151:12, January, 1931, *Am. J. Med. Sciences.*
7. Margolis & Dorsey: *Arch. Int. Med.*, Vol 46: 121, July, 1930.
8. Koch & Mellon: Abstr. *J. Bact.* 19:25, January, 1930.

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Discussion

Dr. Osbourne O. Ashworth, Richmond: I first became interested in blood culture work in Chronic Infectious Arthritis in 1927, when I had the privilege of treating two patients from whom Dr Cecil had isolated a streptococcus.

Mr. Straus and I are both deeply indebted to Dr. Cecil for his kindness in giving us his technique of blood culture.

In a previous report made about two years ago, I reported fourteen positive cultures from forty-three apparently typical cases of infectious arthritis. In a recent series of thirty-one blood cultures of typical cases, there were seventeen, or 55% positive cultures. If repeated cultures are taken from each typical case after massage or exercise, the percentage of positive cultures will be much greater.

When positive cultures are not obtained from the blood, most patients will submit to a joint culture or to the removal of an adjacent lymphatic gland, which may show the typical organism described by Cecil.

It is hard to say just how much benefit is obtained from the autogenous vaccine in these cases. Arthritis is definitely only one branch of a large pathological tree.

When treatment of the patient's general condition, correction of metabolism, anemia, nervousness, treatment of the very frequent achylia, colonic irrigations, removal of the foci of infection, administration of a low carbohydrate or low purine diet (where indicated), baking massage, vasodilators when there is lowered sugar tolerance, have failed to give visible improvement, and when these are tried together with vaccine therapy and arrest or cure occurs, it is definite that there is something to the vaccine besides psychotherapy.

Results from small doses of vaccine given intravenously have been much more definite than from larger doses of vaccine given sub-cutaneously in my series of cases.

Rowntree and Adson have called our attention to the effect of sympathetic gangliectomy and ramisection with remarkable results in some cases Though this procedure very evidently does not eliminate infection, it may alter tissue reaction against infection with resulting clearing up of disability and deformity.

If the reaction is one of bacterial allergy, here again for cure we are more dependent upon specific desensitization against the offending organism for best results. In three cases where an organism was isolated from a joint, striking results were obtained by the use of vaccine therapy.

I am certain that the reason Mr. Straus has had such a low percentage of positive cultures is due to the fact that there has not been a proper selection of cases. Most of his cultures have been cases of degenerative arthritis, and repeated cultures have not been taken from typical cases.

I am mueh interested in Dr. Cecil's remarks regarding sedimentation tests which may help us in knowing when our patients have had a sufficient amount of vaccine therapy.

Dr. Russell L. Cecil, New York City: It is a great gratification to me to see these results corrobora-

tive of our findings coming from the laboratories of Mr. Straus and his co-workers. I am quite sure that he is right in his statement that diphtheroids can be transmuted into Streptococci. Not only Rosenow, but other individuals have told me they have seen this happen in their laboratories, and certainly it has happened in our laboratory more than once. Some very interesting work has recently been done at New Haven. In the process of working with bacteriophage, diphtheroids have been transmuted into Streptococci. It looks as though modern bacteriology is getting so strange that the whole science will have to be rewritten.

Recently we were put to a blindfold test by the Presbyterian Hospital of New York, which sent about sixty bloods for diagnosis. Out of these sixty we picked correctly nineteen bloods from patients with rheumatoid arthritis by the agglutination test. When Streptococci become green they lose their agglutinative quality. I do not want to be too dogmatic, but I believe that these organisms are probably one biological group. I must admit that frequently we get our organisms out of the blood in green form, and in the green form they do not agglutinate. If we can get them in the hemolytic state they will agglutinate. Not only that, but also the Streptococci which are recovered from scarlet fever or erysipelas will agglutinate with arthritic serum. It often happens that the patient's serum will not agglutinate his own strain.

This is difficult bacteriology, and these organisms are hard to work with. But I am convinced that we are on the right track and that this work will eventually be corroborated.

Mr Straus, closing the discussion: I want to thank Dr. Cecil again and express my appreciation for the cooperation and help that he has always given us. I want to repeat, also, that I think much of the difficulty we are all having is due to the fact that the classification of the Streptococci is still in a chaotic condition. Everybody, I believe, is classifying them somewhat differently.

If I may be pardoned for doing so, I shall use my pneumonia analogy once more. I think in this work we have to keep in mind that it is perfectly possible that the apparently discrepant results of these different workers may all finally fit into the picture. Following the flu in France, we might have said that pneumonia was caused by the streptococcus. On the other hand, had I never examined pneumonia anywhere else except in Richmond one particular winter, I would have said it is caused only by Type I Pneumococcus. I think we may likewise come to find that all these different findings in arthritis will fit into the general scheme.

THE ASSOCIATION OF ANGINA PECTORIS AND ANEMIA.*

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In 1918 Herrick and Nuzum,[1] in a discussion of their clinical experience with 200 cases of angina pectoris, called attention to the occasional association of this syndrome with severe anemias. They noted four cases in their study. In 1927, Herrick[2] reported three additional cases and in his report discussed the relationship of anemia as a contributing factor in angina pectoris, particularly in those individuals who have imperfect coronary circulation from narrowing of the lumen of these vessels by sclerosis and atheromatous degeneration. Bullrich,[3] in 1925, cited seven cases in his own practice. Coombs,[4] in 1926, described eight cases, and Evans reported one case the same year.

In reviewing our cases of megaloblastic anemias, thirty-five in number, we found two of them had angina pectoris (effort type). None of the previously reported cases received liver treatment; consequently, the relationship to the anemia was not definitely established. It would appear logical to study cases of this type during an artificially induced remission following adequate liver therapy. A study of this type more completely evaluates the importance of the associated anemia while at the same time it gives one some insight into the pathologic physiology and the pathogenesis of angina pectoris.

Case One: W. M., contractor, aged 60. First seen September 29, 1929, complaining of substernal pain and oppression induced by slight exertion. He stated that his first symptoms were noted fourteen months previously, and that they were fatigue, slight dyspnea and substernal oppression when he walked rapidly up slight inclines. These symptoms had gradually increased in intensity until at that time he could not walk as much as a level city block without experiencing such intense substernal pain and oppression that he would be forced to rest. Rest gave him complete relief. His history was otherwise essentially negative, except that he had recently noted numbness and tingling in the hands and feet and that his complexion was sallow.

Physical Examination: The patient was a well nourished man, weighing 196 pounds, 5 feet, 10 inches in height. The mucous membranes and skin were manifestly pale and the tongue was smooth, clean, and the papilla atrophied. The heart was normal in size and shape and there were no cardinal murmurs. The first sound was lacking in muscle tone, and the second aortic sound was amphoric and ringing in quality. Pulse rate 84, sinus rhythm. The peripheral arteries and fundus vessels showed moderate sclerosis. The blood pressure was 115 systolic and 85 diastolic. The

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electrocardiogram showed slight left axis deviation and an isoelectric T-wave in lead I.

Laboratory Data: September 7, 1929, Hemoglobin 62 per cent. R. B. C. 2,130,000, W. B. C. 4,600, polys 68 per cent, mean diameter 9 microns, reticulocytes .05 per cent. Gastric analysis: Hydrochloric acid 0, combined acidity 11, total acidity 11. Blood negative.

Diagnosis: I. Angina pectoris. II. Coronary sclerosis. III. Pernicious anemia.

Course and Treatment: September 8, 1929, liver extract 30 c.c. t. i. d., dilute HCl 4 c.c. t. i. d. September 20, 1929, hemoglobin 76 per cent, R. B. C. 3,200,000, W. B. C. 8,400. On this date he reported that he could walk on the level with comfort. October 10, 1929, hemoglobin 86 per cent, R. B. C. 4,400,000. Symptom free. November 2, 1929, hemoglobin 94 per cent, R. B. C. 5,000,000. On this date he was free from symptoms and he has engaged actively in his vocation up to the present time.

Case Two: White male, farmer, aged 56. First seen December 9, 1929, complaining of nocturnal dyspnea and substernal pain which had recurred nightly for a period of two weeks. He stated that for seven months he had been unable to do any work for the reason that minor effort caused severe pain in the substernal area and left arm, but this would be completely relieved by sitting down for eight to ten minutes. At present he was confined to bed, yet the attacks continued to occur at night, requiring morphine for relief. Two years previously he had been transfused three times for anemia, but on account of the finding of an adequate amount of hydrochloric acid in the gastric content no liver feeding was recommended. For eight years he had a varying amount of diarrhea, amounting to six to eight stools during the worst periods, but never less than three to four stools a day. The stools were not bulky and never contained blood. Anorexia was almost absolute. His weight had reduced in three years from 168 to 122 pounds.

Physical Examination: A poorly nourished man, 5 feet, 10 inches in height, weighing 119 pounds. The skin and mucous membranes were manifestly pale. The tongue was coated and there was no atrophy of the papilla. The lungs were negative, except for many small and large moist rales in the bases posteriorly.

Heart: Apex in the fifth interspace, 10.5 cm. from the median line, and was diffuse in quality. Percussion denoted a general increase in relative cardiac dullness, the left margin being 11 cm. from the median line in the fifth left intercostal space. There was a systolic murmur heard at the apex, transmitted laterally to the left, and a systolic basal murmur, but there were no associated thrills. The aortic second sound was indistinct and the pulmonic second sound was definitely accentuated. The peripheral and fundus vessels showed moderate sclerosis. The pulse was regular, rate 110, blood pressure systolic 168, diastolic 90.

Abdomen: Generally tympanitic, especially in the lower zone. The edge of the liver was palpable and slightly tender.

Neurological examination negative.

Laboratory Data: Blood—hemoglobin 71 per cent, R. B. C. 2.810,000, W. B. C. 5,400, slight anisocytosis and poikilocytosis, mean diameter 9-1 microns, serum calcium 8.2 mgm. Stomach analysis: HCl 20 degrees, total acidity 36 degrees. Blood negative. Stools negative for ova. parasites and blood. No excess of fat noted. Electrocardiograms: rate 110, rhythm normal, Q. R. S. complexes low voltage in all leads. P. R. interval 0.21 sec. T-wave isoelectric in lead I.

Diagnosis: I. Angina pectoris. II. Congestive heart failure. III. Non-tropical sprue with a megaloblastic anemia ("pernicious anemia" type).

Treatment: Bed rest was continued, and liver feeding started on December 10, 1929, consisting of 30 c.c. of an aqueous extract of liver three times a day. The calculated basal dose of digitalis was given orally during the first twenty-four hours. January 8, 1930, hemoglobin 85 per cent, R. B. C. 3,900,000. At this time all nocturnal pain and dyspnea had disappeared. January 13, 1930, hemoglobin 92 per cent, R. B. C. 4,400,000. On this date the patient was advised to sit up. It was apparent that he was gaining in weight for his appetite was above normal. The patient has been seen at regular intervals and his progress noted. The red blood count has remained between four and five million. When last seen, one month ago, his weight was 156 pounds and he was entirely free of cardiovascular symptoms and he was engaged in active physical work.

Discussion: The two patients present many features in common. They were both past fifty years in age and it may be assumed that the coronary arteries had already begun to lessen in area from sclerosis of these vessels. In each instance, however, the vascular bed was adequate to meet the demands for myocardial nutrition so long as the circulating blood was normal. When the qualitative condition of the blood was below normal the compensatory mechanisms were inadequate to meet the nutritional needs of the heart muscle and relative ischemia became absolute. The relief from symptoms in each instance, following the restoration of a normal qualitative state of the circulating blood, proves in these instances that deficiency in available oxygen was at least one factor in the production of the angina pectoris syndrome. It is surprising that angina pectoris as well as other myocardial syndromes are not noted more frequently in the primary anemias, especially when it is noted what a tremendous increase in heart work there is in the severe anemias.

Fahr and Ranzone,[5] studying the circulatory compensation for deficient oxygen carrying capacity of the blood in severe cases of pernicious anemia, noted that the minute volume of blood was increased about 250 per cent and that the systolic output of the heart was increased in the same degree. This was brought about largely by an increased blood velocity due to lowered viscosity of the blood and an increased effective cross section in the vascular tubing. The same observers concluded that the coronary circulation in the severe anemias is at the upper limit of the possible, being about as great as that found in severe work. These compensatory adjustments can take place only in the presence of a normal coronary arterial tree. The two cases here studied developed incapacitating symptoms with blood levels in each instance above two million and hemoglobin percentages never less than 60 per cent. It may be assumed, therefore, that imperfect coronary circulation existed from diseased vessels, and that the superimposed anemia precipitated incapacitating myocardial ischemia.

Conclusions

I. Two patients having a megaloblastic anemia and angina pectoris have been studied and in each instance relief was obtained by restoring the normal qualitative state of the blood by liver feeding.

II. In the study of angina pectoris the possibility of an associated anemia as a possible precipitating factor must be considered, or a valuable therapeutic approach to the situation may be omitted.

III. This study adds additional evidence to the "myocardial ischemia" conception of the pathogenesis of angina pectoris as opposed to the aortic theory.

Bibliography

1. Herrick, James B., and Nuzum, Frank R.: Angina Pectoris, Clinical Experience with 200 Cases. *Jr. Am. Med. Assn.*, 1918, LXX 67.
2. Herrick, James B.: On the Combination of Angina Pectoris and Severe Anemia. *Amer. Heart Jr.*, Vol. II, No 4, Pg. 351, April, 1927.
3. Bullrich, R. A.: Influencia Pathogenica de los Estados Anemicos sobre la angina de pecho, *Semana Medica* (Buenos Aires), 1925, II, 1137.
4. Coombs, Cary: A Note on the Cardiac Symptoms of Pernicious Anemia, *Brit. Med. Jour.*, 1926, II, 185.
5. Fahr, George, and Ranzone, Ethel: Circulatory Compensation for Deficient Oxygen Carrying Capacity of the Blood in Severe Anemias *Arch. Int. Med.*, 29, 331, March, 1922.

TRAUMATIC INDUSTRIAL SURGERY.*

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The American College of Surgeons has had three meetings to consider this rapidly growing and important branch of surgery. Thoughts and ideas have been exchanged relative to the care of the injured and, in the preparation of their program, advice has been secured from those interested in both scientific and economic sides. Keen interest has been shown in these meetings and it is expected that better surgical care can be secured for the injured workman.

The board began its work in 1927. The object was to search for facts, and to analyze and arrange them to the end that they might be utilized practically and effectively in applying better care for the injured.

All of their research and discussions indicate that there is no indiscretion in the conclusion that the better, the more scientific, and the more intelligent management of the injured workman results in a greater economic saving for all concerned. No doubt exists in the belief that this is a great scientific and economic problem which our surgeons can be of great assistance in improving. An opportunity is offered

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if our profession will participate in a work which I have found to be interesting.

The surgeon doing industrial traumatic work must familiarize himself with the Workman's Compensation Law. He is as much governed by that law as the injured workman or corporation, and in participating in this work and being responsible to several units must make himself an integral part in spirit as well as practice.

These traumatic cases present problems quite different, scientifically and psychologically, from those encountered in a general surgical practice, and I predict that the future will provide us with a fuller opportunity to study the psychology often encountered in accident victims, and I hope that we will give thought to the treatment of traumatism.

The injured workman is a human organism and his treatment and ultimate welfare should not be jeopardized by the employment of surgeons on any basis except a standard fee basis. Any other basis of remuneration is contrary to the best treatment, and the success of traumatic surgery is undermined, as cheap fees along with poor results are costly. As stated, their individual and collective, present and future welfare is not safeguarded nor are the recommendations of the Board of Traumatic Surgery met, and no economy is obtained for the industrial plant or insurance carrier.

The past twenty years have witnessed tremendous change in the attitude of employer to employee and the strides in orthopedic and plastic surgery are well enough known. Every one of us can remember when a workman took a job at his own risk and if he was not satisfied with the safety of the work or the hygienic surroundings, he could quit. This was a pernicious attitude and I think the workman of today should be very grateful for what is being done to rehabilitate him and have him classified as a tangible asset to his company. The slaves of our forefathers were considered as such and had a definite money value. In those days it was considered wise to restore them to health. Therefore, with our increased knowledge he should be considered as such today and enjoy the benefit of such scientific knowledge as we have acquired.

As I have said, a marked change has taken place in the past few years and it has not reached its completion. The workman has acquired new rights which are recognized both by his employer and the public. This, I think, is due to the increasing democracy of mankind, and the realization by the employer that after all he is his "brother's keeper" and that restoring an experienced workman to his regular duties is economy. Industry has learned that it is cheaper in dollars and cents to keep employees healthy and safe, for every man, however humble his work may be, becomes more efficient as his experience increases. He has a right, therefore, to demand his safety, and it becomes the duty of those of us who do a certain amount of industrial surgery to use our best efforts to maintain the health and safety of this large group of American citizens and to restore to health as quickly as possible those who have become disabled.

We also have to consider the psychologic side of this rapidly growing and important branch of medicine, and it has been proven to me time and time again that the handling of an injured workman differs from the handling of a private patient. The latter comes to you as a result of his own decision, but because the workman is sent to you there exists some doubt in his mind as to how well he will be received. Since we must learn the truth and since we must enforce our faithfulness to employer and employee it is not easy to place him in a position of ease and learn the truth. This, of course, does not apply to those who suffer definite objective signs of injury, but numerous industrial cases, especially back injuries, feel like it is necessary to exaggerate their feelings in order to impress the attendant with the seriousness of his case, without an intention to deceive him. From this impression it has been my experience that I can learn the truth more quickly by conceding the accident and, admitting that he is suffering, impress him with the importance of his visit; by so doing I can get from him more history, more truth, and pick out that very small group of malingerers.

How important, therefore, it is for the industrial or traumatic surgeon to find a way to learn the truth in order that the correctness of the primary diagnosis be assured, complications prevented, and loss of time, which results from functional impairment and runs into a large total, be reduced.

Injuries of the back present to me a most difficult problem. To arrive at anything like an accurate diagnosis is, at times, very hard,

and for practical purposes they can be divided into five groups:

a. Muscle strain.

b. Lesion of sacro-iliac joint.

c. Sprain of deep lumbo-sacral structures.

d. Chronic strains.

e. Non-traumatic disease of lower back.

(a) Simple muscle strain caused by heavy lifting in one not accustomed to that much exercise is seldom seen, as the condition corrects itself in a few days.

(b) Sprain of sacro-iliac joint manifests itself by a sudden pain in lower back. The patient feels as if something has suddenly given way; he has to give up his work, but symptoms do not reach the maximum for 24 hours. Immediate examination will locate pain in the sacro-iliac joint, and later the whole lower back becomes sore. There is always a synovitis and, if the effusion is marked, a slight fullness may be felt over the joint. Kernig's sign is present. It is also noticed that these patients can bend the body toward the afflicted side, but motion to the opposite side is limited.

(c) The symptoms of the lumbo-sacral structures are in many ways similar to those of the sacro-iliac. The maximum pain occurs immediately rather than twenty-four hours later. Pain is a little higher and deeper. There is more limitation of motion of the lower spine than in sacro-iliac strain, and Kernig's sign is absent. In both types treatment is essentially the same and consists of absolute rest on a fracture bed, strapping of back and application of heat. Massage or passive motion is contraindicated. When these patients get into the hands of the osteopath the last state of that man is far worse than the first.

(d) The fourth group, or chronic strain of the back can, just as in other joints, result from repeated mild acute strain. Or they may occur as the result of years of poor posture. These cases are more vague and indefinite, and are well illustrated by that large group who went into the service. When stripped for examination they appeared to slump, standing first on one foot and then on the other, leaning against some object for support; they were definitely round shouldered, and their pains were vague. When they returned home they were erect with good strong back muscles. We see a great many of this type of patients who are prone to blame their pain on some unusual strain rather than their own physical defects.

(e) Lastly, we see back strain of non-traumatic origin, such as hypertrophic arthritis resulting from a focal infection, tuberculosis, chronic prostatitis, and bone tumors. Obviously in these cases X-ray is invaluable, and they should be treated by the orthopedist. Furthermore, I would urge that those cases of sacro-iliac strain which do not clear up in a reasonable time should have the benefit of the othopedic surgeon's advice and treatment.

Concerning hernia, I think there are times in the history of a hernia when even a physician is not able to determine its presence. After some strain the patient will finally discover he has a small inguinal lump, but this does not prove that it has just come into existence. It has just come down where it can be seen, for we have finally realized that hernias are potentially present from birth, that there is an open funicular process in the hernial canal which is congenital and that the term rupture, which implies the sudden giving way of the structures involved, is incorrect. A superficial study of the case might lead one often to arrive at this conclusion, but it is so exceptional that it represents a very minute fraction of the total.

Important as the X-ray is in general surgical practice, it is far more so in industrial surgery. It reveals positive evidence which often cannot be otherwise obtained and for the attendant adds a feeling of security, protection, and accuracy.

In the State of Virginia thirty-six thousand accidents were reported to the Industrial Commission last year. When we combine industrial accidents with highway accidents the total is very large, and it is my belief that anything, traumatism or disease, that exists to this extent occupies a very large place in our daily work.

In conclusion, I wish to emphasize, again, the large place that industrial surgery occupies in our daily practice, that it has problems peculiar to itself, and it behooves us to fit ourselves to handle properly this rapidly growing and important branch of surgery.

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PELLAGRA.*

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Pellagra is a disease characterized by skin lesions, gastro-intestinal disturbances, nervous and mental changes, and periodic seasonal variations.

Although pellagra has been known to be more or less prevalent in certain sections of Europe for nearly two hundred years and in this country for about twenty-five years, it is only recently that the cause for this disease has been made clear and any practical measure adopted for its prevention and treatment.

Pellagra occurs chiefly in this country in the rural sections of the south, principally where cotton is the dominant crop or where cotton manufacturing is the principal industry.

Pellagra occurs in Virginia chiefly along the southern border of the state with three southwest counties, Wise, Scott, and Washington reporting a considerable number of cases.

Statistics on pellagra in Virginia are not complete; too few cases are reported for the number of deaths.

In 1926 there were 236 cases reported with 116 deaths.

In 1927, 411 cases, 156 deaths.

In 1928, 460 cases, 193 deaths.

In 1929, 352 cases, 228 deaths.

In 1930, 808 cases, 212 deaths.

Taking a mortality of 10 per cent which is high, you can see that the number of cases reported is too small. Pellagra is either not being recognized as often as it should or the doctors are not reporting their cases.

Etiology.—It has been definitely established that pellagra is a dietary deficiency disease. Prior to the work of Goldberger and his associates, numerous theories had been suggested as to its cause and everything from cornbread to evil spirits had been accused. It is now generally believed that it is one of the dietary deficiency diseases caused either by a lack of an essential substance in the diet—a vitamin—or to a poorly balanced diet of low protein content.

It has been abundantly demonstrated that pellagra can be produced or prevented by varying the quantity of foods that contain the anti-pellagra substance, or vitamin. Pellagra is brought about by the absence of a specific and essential dietary factor and is in no way dependent upon starvation; the other foods may be in physiological balance except for shortage of this factor. In support of this dietary theory as to its origin is the prompt response of active cases to a well balanced diet, and the disease can be prevented by an adequate diet without intervention of any other known factor.

Also Goldberger and Wheeler carried out feeding experiments on convicts in Mississippi. The diet was derived from wheat flour, maize, corn, grits, starches, rice, Irish and sweet potatoes, some green vegetables, pork fat, sugar and syrup. At the end of six months six out of the eleven convicts showed evidence of pellagra while a large number of controls given an adequate diet showed no evidence of the disease. The cases seen in the well to do, where an adequate diet should be available, are those with some real or fancied digestive disturbance which has caused them to limit their diet. An analysis of the diet of a pellagrin always brings out the fact that there is a restricted supply or absence of foods of the animal protein group, that is, lean meat, milk, butter, and eggs.

The conclusions reached in an article to be published soon in the *Archives of Internal Medicine* by Dr. James H. Smith, are that there is evidence to suggest that the nutritional lack referred to by Goldberger may be in part specifically a lack of sulphur (cystine) or an error in the metabolism of sulphur. Further, the evidence suggests that given a nutritional lack, exposure to solar rays of high intensity tends to produce pellagra, particularly if there has been a deficiency of exposure to solar rays in winter. He also called attention to the fact that the distribution of pellagra correlates closely with the distribution of the cotton and tobacco crops, and that in communities where these crops are major agriculture interests, the annual incidence of pellagra tends to vary inversely with the price and inversely with the production of cotton and tobacco (acreage multiplied by yield per acre).

The Onset of the disease is insidious. There may be some loss of strength, vague digestive disturbances, slight diarrhea, headache, dizziness and some mental depression. A variable time after these symptoms the typical rash appears. It usually begins on the back of the hands as an erythema resembling an ordinary sunburn. The forehead, neck and feet may be involved. The lesions are symmetrical in lo-

*Read before the Southwestern Virginia Medical Society at its meeting in Marion, September 24 and 25, 1931.

cation and are apt to be sharply defined and usually on areas exposed to the light. The lesions may persist for a few days or weeks and in chronic cases recur each year. The end result is usually an atrophic scarring so that the skin on the back of the hands and forearm has a parchment like texture with some pigmentation.

Symptoms referable to the digestive tract are stomatitis and diarrhea. Recurrent diarrhea occurs in about 75 per cent of the cases.

Mental changes occur in about one-third of the cases and many vary from apprehension, irritability, confusion, to actual dementia.

The blood picture may show a secondary anemia. About 40 per cent of the cases have either hypochlorhydria or an acyhlia gastrica.

The Diagnosis of pellagra in a well developed case offers little difficulty. With a careful history of the diet, sore mouth, diarrhea and symmetrical dermatitis on exposed areas of the body the condition cannot easily be confused with anything else. The mental changes may be absent. The diagnosis should rarely be made without the skin lesions.

The Prognosis, provided the case is seen early and the diet corrected, is favorable. The mortality for all cases should be under 10 per cent.

The Treatment consists of dietary, hygienic and drug therapy, given in order of their importance. Since the disease is unquestionably due to some dietary deficiency the rational thing to do is to supply the missing factors in the diet. The patient and family should be told the cause of the disease and the importance of the patient consuming an adequate diet. All fried foods should be forbidden, no salt meats or fish allowed. The patient should have plenty of milk, eggs, fresh meats and fish, chicken and fresh vegetables. The meat should be stewed or baked.

The Hygienic treatment requires that the patient be kept clean and comfortable.

Drugs play a very minor part in the treatment. Of the drugs used in the treatment, arsenic and dilute hydrochloric acid seem to be of some value. The arsenic may be given in the form of Fowler's solution. In cases of patients with achylia gastrica or hypochlorhydria, the dilute hydrochloric acid may cause a rapid disappearance of the stomatitis and diarrhea.

The response to the treatment is usually very prompt, the rash begins to fade in a few days, the mental condition improves and the whole physical make-up undergoes a change for the better. The diet must be followed indefinitely, once the patient has pellagra, or the disease will recur.

References

1. Cecil. P. 573-576.
2. Tice. Vol. IX.
3. Special Article. E C. Joyner. Treatment of Pellagra, February, 1931, *Virginia Medical Monthly.*
4. Beckman. Treatment in General Practice.

WHY ALWAYS APPENDECTOMY?*

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If there is an abscess in the appendix, if it is plastered to the cecum, if it is covered by dense adhesions and if the abscess is pointing into the cecum, the abscess may, by manipulation, be ruptured into the gut. Then, by sutures, the appendix may be buried deeper in the intestinal wall, thus saving the peritoneum from infection and insuring permanent drainage into the cecum.

If the appendix has ruptured and if an abscess has formed, a local anesthetic should be used and the abscess should be drained. The appendix can be removed later if necessary. This, of course, is known to everyone, but is certainly not generally practiced. This procedure should be emphasized.

While practicing in China and the Philippine Islands many years ago, I had a large number of cases of amebic dysentery, treated by washing the colon through an appendicostomy or cecostomy. The results were very satisfactory.

In recent years I have used appendicostomy and cecostomy for another purpose. In many cases of ruptured appendicitis I do an appendicostomy, if there is enough of the appendix normal or near normal at its base to allow this procedure. If the appendix is all bad, a cecostomy may be done. A large catheter with many holes is put into the cecum and led through the ileocecal valve into the small intestine. This catheter is left open continuously, and, every three hours, four ounces of a five per cent (5%) soda solution is put through this catheter into the cecum. Glucose may also be used. As the appendix is already ruptured, this operation should not increase the infection.

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Advantages of the Above Procedure

Gas is allowed to come away even better than when an enterostomy is done.

Post-operative acidosis is prevented.

Fluids are supplied.

Disagreeable enemas are not necessary.

Vomiting is nearly always prevented.

I believe that cases thus treated are much more comfortable and that they have a much better chance for recovery.

I have used this procedure for several years at the Fauquier Hospital, Warrenton, Va., and at the Loudoun Hospital, Leesburg, Va. Believing the results to be satisfactory, I ask, "Why always appendectomy in ruptured appendicitis? Why not appendicostomy or cecostomy?"

REMOVAL OF TONSIL BY ELECTRO-COAGULATION.

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Tonsillectomy is the most commonly performed surgical operation of today, and it is performed by the throat specialist, by the general surgeon, and by many general practitioners. It is unfortunate that many of the laity, and even many physicians, regard tonsillectomy as a comparatively simple and minor surgical procedure. Some tonsil operations are very difficult of perfect execution, so much so that post-tonsillectomy study of a considerable series of cases operated on by presumably experienced surgeons showed that three out of four of this series of tonsillectomies were imperfect in one regard or another when the throats were carefully examined some months after operation. In some, a fragment of tonsil tissue was left in one or both fossae; in others, the pillars had been removed or otherwise mutilated; uvulas were sometimes missing, or the throats so scarred up as to impair perfect function. In unskilled hands a tonsillectomy may be even dangerous to life from hemorrhage or other complication; and, with the best of hospital facilities and most expert operators, no tonsil operation can be said to be entirely devoid of danger.

The trouble is not so much with the operators, as it is with the operations—the operative technics commonly employed. In order of usage, tonsillectomy technics employed mostly today are snare and dissection in its many modifications; Sluder; electro-coagulation; and, lastly, perhaps suction tonsillectomy.

Despite its widespread usage, snare and dissection tonsillectomy is by no means a satisfactory technic. Its chief advantage is, perhaps, that it is at least applicable to all types of tonsils. Because it is often tedious and attended with more or less free bleeding, with resultant loss of still more time with hemostatic efforts, a great many dissection operators insist upon general anesthesia for all tonsil cases, adults as well as children. Either that, or the patient is so stuporous from some morphin-hyoscin combination that the average "local anesthesia" dissection tonsillectomy is more of a narcothesia than a local anesthesia. Both general anesthesia and narcothesia simply add to the patient's risk and discomfort. Because of the frequent occurrence of free hemorrhage, either primary or secondary, with tonsil dissections, such a tonsillectomy is distinctly one for hospitalization as a major surgical procedure. One has but to study the hundreds, even thousands, of tonsil instruments illustrated in current surgical catalogs to realize the widespread efforts made to obviate the difficulties and dissatisfactions of dissection tonsillectomy.

Jacobs and Trauner paint a perfect pen picture of snare and dissection tonsillectomy: "Theoretically, tonsillectomy by preliminary dissection aims to remove the entire tonsil intact, with the least amount of hemorrhage. This it often fails to do. The capsule is often so intimately adherent to the underlying aponeurosis that it is impossible to separate the two by means of a knife. What usually results is that the knife gets into the fascia back of the capsule and opens many bleeders, or else it gets into the tonsil tissue proper, so that the fibrous capsule is left in the fossa."

This pen picture is absolutely true to life, so much so that post-tonsillectomy observation of a large series of throats shows that three out of every four tonsil operations are imperfect in one respect or another—not a reflection upon the operators, but mute evidence of the inadequacy of dissection technic.

Neivert, of New York, an adherent of the so-called "sharp dissection school," paints the same picture in different words: "Our greatest difficulty is with tonsils bound down by scars and adhesions. Here a little patience and a sharp knife cutting close to capsule will keep us from buttonholing the pillars and pulling away chunks of muscle which cause excessive bleeding, possible infection and sub-

sequent scarring. * * * How to make sure that one is in the proper line of cleavage is at times difficult. * * * Small tabs of tonsil or capsule with tonsil-bearing cells must not remain. * * * Taking off the pillars or uvula is scarcely excusable. * * * Perhaps the thing that worries us most is the bleeding."

"The capsule (so-called) is often so intimately adherent to the underlying aponeurosis that it is impossible to separate the two by means of a knife."

When the dissection operator encounters these badly adherent, deeply submerged tonsils of adult life, perhaps with a history of repeated peritonsillar abscess attack, he simply encounters a "mechanically impossible" situation, and endeavors to knife his way out to best of his ability.

One Chicago operator sadly but truthfully lamented: "I have been doing tonsil work (dissection) for twenty-five years, and I cannot do a decent job yet. One operation is very satisfactory; and maybe the very next one is such a bloody mess that it makes me ashamed of myself."

On the right kind of tonsils and in hands of a skilled operator, the Sluder technic is comparatively rapid and gets the tonsil cleanly in capsule; but all too often it also gets one or both pillars, slices the tonsil, or ends up in free bleeding. How difficult the Sluder technic is to acquire may be estimated from a remark by Sluder to the effect that he performed his operation a thousand times before he attained proficiency with it. The Sluder technic is not well adapted to local anesthesia operation,—so much so that many Sluder operators insist on general anesthesia for all cases, and dissect such tonsils, as they may slice with Sluder technic; or there are cases which experience tells them not to attempt with the Sluder instrument. Aside from damage to pillars and underlying throat tissues, the so-called sharp Sluder occasions free bleeding almost as commonly as does dissection technic. As a general thing, then, it may be said that the Sluder operation is rapidly losing ground in this country.

While it is strictly a surgical procedure, the suction technic eliminates almost completely the difficulties and disadvantages of Sluder and snare and dissection. It is very rapid, practically bloodless, and enucleates in capsule all types of tonsils with virtually equal ease,—and this without damage to pillars, uvula or underlying throat structures. The operation is peculiarly well adapted to local anesthesia operation, because the tonsil may be enucleated in from ten to fifteen seconds actual operative time, without pain or appreciable discomfort to patient, and it is practically bloodless in the vast majority of cases. On badly adherent and submerged tonsils, the technic is at its best, and is almost spectacular on the very types of tonsils that try the soul of the dissection operator and cause the Sluder operator to take one look and then lay aside his Sluder instrument with a baffled air. Experience has taught him he simply cannot get that kind of tonsil with a Sluder instrument. On these submerged and adherent tonsils, the tonsil suction tube simply lifts the tonsil into the bowl of the suction tube by air suction pull, whereupon the tonsil snare, previously adjusted, is rapidly carried down over the end of tonsil tube, and, as it is tightened, the heavy dull wire loop automatically drops into the line of cleavage between tonsil proper and the underlying aponeurosis, and dissects or shells-out the tonsil in capsule so rapidly the eye can scarcely follow; unless actually seen at operation on some of these badly adherent, submerged tonsils, the thing is almost unbelievable. Tonsil operators who have never seen the suction method, as performed with proper equipment and technic, are able to conjure up all sorts of imaginary objections and difficulties; but these must fade into thin air in the light of actual performance. "Seeing is believing," as it were.

It is true, then, that the suction technic practically eliminates the difficulties and disadvantages of the older tonsil technics; and, because of its clean, bloodless type and absence of complications, may be performed under local anesthesia on adults just as easily and safely in the well-equipped office as in the hospital; but it is a surgical technic and the patient is not going to be able to get up from the surgical chair minus his tonsils, put on his hat and coat and go about his daily avocation. Restricted physical activity for four or five days to a week and a liquid or semi-liquid diet and more or less pain and discomfort are unavoidable accompaniments of surgical tonsillectomy, whatever the technic employed.

With the adult tonsil patient today, however, it is possible to remove his or her tonsil as a strictly "office" treatment without pain.

without bleeding or surgical shock, without damage to contiguous throat structures, with the patient able to enjoy the usual meals each day, and yet be completely ambulant throughout the treatment,—no hospitalization expense and no loss of time from daily avocation. These are economic factors that must be seriously considered with many tonsil patients. I refer to removal of the tonsils by multiple-stage electro-coagulation treatment.

Because of its manifest advantages from the patient's standpoint especially, all of my adult tonsil cases are given their choice of local anesthesia suction tonsillectomy, or of local anesthesia electro-coagulation removal of tonsils. In the hemophiliac and in the aged and physically debilitated, where tonsillectomy is indicated, electro-coagulation is my method of choice, not because it is easier for me, but because I believe it is easier and safer for the patient.

Electro-coagulation tonsillectomy by one-treatment technic is not advocated; and it is not advisable in children, where general anesthesia is a practical necessity for proper work.

Tonsillar coagulation has gone through the developmental period incident to any new surgical procedure; and it has been highly praised and just as severely condemned, but condemned as a rule by those who really know nothing of the technic in a practical sense, or who have attempted the work with inadequate high frequency electrical machines, or without proper instruction and technic. These are absolute essentials, requiring not only good knowledge of the anatomy and surgery of the tonsil region, but also careful and conservative usage of electro-surgical technic.

No effort will be made in this article to go into minute technical details of electro-coagulation; but it is absolutely essential that a high frequency machine be employed of suitable capacity for coagulation work, of which there are a number of efficient standard makes on the market. The machine must be accurately set to deliver proper current, and the operator must be thoroughly familiar with the capabilities of the individual machine he employs. Foot-switch control is an absolute essential. I do not find it necessary in the average case to employ any pre-operative sedation for coagulation work on the tonsils, because, with adequate local anesthesia and explanation to the patient of the technic, there is no shock and no fright.

There are several methods for placement of the indifferent electrode. The operator should employ the procedure which suits him best in this regard. A Dillinger, Plank or other suitable electro-surgical needle is employed as the active electrode, with the patient seated upright in a wooden chair with headrest. Exposure of the tonsil and protection of the pillars is greatly facilitated by employment of the new insulated tonsilloscopic tongue depressor, a combined pillar retractor and tongue depressor. The patient's throat is sprayed four or five times at intervals of a minute or so with a 2 per cent nupercaine-epinephrin solution; this quickly anesthetizes the pharyngeal mucous membrane and quiets down the gag reflex. Then the tonsil and pillars on the side to be treated are swabbed a few times with the same nupercaine solution. As a rule, one tonsil is treated at a time, the patient returning in one week, when the opposite tonsil is treated. Excess saliva and mucus may be controlled by atropine; but suction cleansure of the pharynx may be effected very easily as needed by a foot-switch controlled air suction pump with the aspirator suspended conveniently at hand from an overhead cable.

Field of operation may be illuminated by an electric headlamp or with the ordinary reflecting head mirror. Under direct inspection the active electrode needle is placed accurately wherever desired in the tonsil and the foot-switch pressed down. Coagulation about the needle point should be practically instantaneous; if not as desired with the first contact, the machine adjustment may be changed to suit. Top of the tonsil is quickly covered, points of coagulation being placed about one-sixth inch apart and the needle point carried into the tonsil tissue about one-eighth inch. Care must be taken to keep coagulation away from the pillars. Much skill and experience is naturally required with tonsils that are badly adherent and deeply submerged, but with proper care and technic such tonsils may be perfectly removed without damage to pillars or underlying throat structures. Before each treatment, it is good practice to suction clean all tonsils of pus and contained crypt exudate. After treatment, the tonsil may be swabbed over with brilliant green, acriviolet, or other suitable antiseptic. The patient is given a

supply of nupercaine throat lozenges to control any after discomfort, which is usually of minor import. The throat may be gargled several times daily with Dobell's Seiler's, Alkalol, or other suitable solution; otherwise, little post-operative attention is required. Immediately after treatment the patient is free to return to his or her usual vocation, as there is no bleeding or other troublesome complication.

A week later the patient returns for treatment of the second tonsil, and these weekly treatments are alternated from one tonsil to the other until both are completely and perfectly removed. After each tonsil has received about three treatments, they have usually been shrunk up and so far removed that both may now be treated at the same sessions without causing appreciable sore throat. As we verge upon complete removal of the tonsil, treatment naturally requires more skill and judgment in depth to which the coagulation is allowed to proceed; but with proper technic the removal is perfect and the throat anatomically and cosmetically left in perfect shape.

This is not always the case after surgical tonsillectomy, as we all must admit. We may remove the tonsils perfectly in capsule, with the pillars intact and standing clear as though graven in stone, and then find, when healing is complete, that scar tissue formation has drawn one pillar or the other out of shape; or perhaps the uvula no longer hangs evenly in mid-line. This, of course, does not refer to cases where the pillars or uvula have been mutilated or partly removed at operation, in which event a cosmetically perfect throat could not be expected to begin with. If there is one error that beginners are prone to make, it is to over-coagulate. It is always safest and best to under-coagulate, because an additional treatment or two is of little moment from the patient's standpoint, if indicated.

For removal of stumps and fragments residual after incomplete tonsillectomies, electro-coagulation is ideal, the technic in general being the same as for complete tonsil removal.

I tell my patients that, from a time and efficiency standpoint, local anesthesia suction tonsillectomy is far easier for me, because, after throat spray anesthetization, only a few minutes more are required for peritonsillar anesthetic injection and suction removal of the tonsils—all at one session. With the coagulation method, from five to six treatments of each tonsil may be required over a period of from four to six weeks—a considerably greater time consumption for any busy doctor.

Our primary regard, however, must always be for the comfort and safety of the patient; and on that basis, if no other, there can be no question but that multiple-stage electro-coagulation removal of the adult tonsil under local anesthesia is a most valuable addition to the armamentarium of any conscientious tonsil surgeon, so much so that we should all discard hasty judgments and erroneous ideas on the subject and *see for ourselves*. The saying is that "You cannot teach an old dog new tricks," but the conscientious physician never becomes too old to eagerly study and evaluate the newer and possibly better developments in medicine and surgery.

REFERENCES

1. Jacobs, S. Nicholas, and Trauner, Lawrence M.: Suction Tonsillectomy-Waring Method. *The Laryngoscope*, June, 1930.
2. Neivert, Harry: The Pitfalls of Local Tonsillectomy. *The Laryngoscope*, March, 1931.
3. Fowler, Robert H: Tonsillectomy under Local Anesthesia. *Journal Med. Soc. of N. J.*, January, 1931.
4. Waring, J. B. H.: A Plea for Local Anesthesia Tonsillectomy. *Eye, Ear, Nose and Throat Monthly*, February, 1930.
5. Waring, J. B. H.: A Few Kind Words for Tonsillar Electro-Coagulation. *Amer. Journal Physical Therapy*, January, 1931.
6. Waring, J. B. H.: Suction Tonsillectomy. *Archives of Otolaryngology*, July, 1930.
7. Waring, J. B. H.: A Plea for Routine Suction Cleansure of All Tonsils Prior to Tonsillectomy. *The Laryngoscope*, January, 1931.
8. Waring, J. B. H.: A Tonsilloscopic Tongue Depressor. *Eye, Ear, Nose and Throat Monthly*. February, 1931.

6075 *Montgomery Road.*

SNAKE-BITE POISON.

OTIS MARSHALL, M. D., Washington, D. C.
First Aid Representative, American National Red Cross.

A student attending the American Red Cross Institute at Brevard, N. C., while standing in the water's edge, listening to a swimming lecture, reached to the bank for a notebook, when she was struck by a moccasin. The two punctures passed through her bathing suit and into the connective tissue, left lower quadrant of the abdominal wall. There was immediate local tenderness, increasing in severity, until quite painful to the slightest touch. In fifteen minutes there was a redness of the skin, but

no constitutional reaction. This redness was about three inches in diameter. At this time incisions were made about one-eighth inch in depth and criss-crossing the punctures. Cupping was done by burning paper put into a small glass to make a vacuum, and glass quickly inverted over the incision. This was repeated several times until the area was quite well bled. Fifteen or twenty minutes later the redness had spread towards the ribs. Some lymphangitis and oedema was present at this time. Incisions were made near the ribs, and bleeding by cupping. By this time the tenderness had greatly increased and there was extreme pain on the slightest palpation. Redness increased near the ribs, but faded in the area of the first incision. There was no shock nor general disturbance at this time.

Anti-venin, 30 c.c. was given into the red area. Two hours after the bite the patient was slightly nervous, somewhat anxious, but on the whole philosophical and cooperative. Three hours later temperature 99 and pule 100. Aromatic spirits of ammonia was given at this time. The temperature rose to 101½° eight hours after the bite, and pulse 126. The patient was exhausted and had a severe headache. The ammonia was repeated several times. A hypo of morphine 1/6th of a grain, and atropine 1/200ths of a grain, was given. By this time the redness around the first incision had about disappeared, and by the next morning was much paler near the ribs. Twenty-four hours later the redness was very slight. Eighteen hours after the bite the temperature was 99-2/10°. Twenty-four hours after the bite the temperature was normal and thirty-six hours after the bite sub-normal. The pulse gradually became stronger and slower. The fourth day the patient was slightly weak and the area of the bite was quite tender. Seven days from receiving the bite the patient was fully recovered. No facilities were at hand for a blood study.

To me it was quite interesting to observe the time elapsing between the local and constitutional symptoms. The extreme exhaustion occurred seven hours after the bite and continued for twelve hours later. The acute local tenderness remained for several days.

Laughter seems to be of real value in the treatment of the worrier. Cheerfulness is a great tonic.—*Selected.*

Miscellaneous

Outline of State-wide Diphtheria Immunization Program.

In view of the increased incidence of diphtheria in Virginia in the past few months, a number of citizens have expressed a desire to have effective measures instituted for the control and eradication of the disease. When these appeals reached the State Department of Health, Dr. Warren F. Draper, Commissioner of Health, wrote the president of the Medical Society of Virginia, Dr. I. C. Harrison, presenting a plan outlined by the Department of Health, and asked his opinion as to presenting this to the physicians of the State. Thereupon, Dr. Harrison called a meeting of the Council of the Society and had Dr. Draper appear and present his plan which he stated was a suggestion which might lead to a joint program between the doctors of the State and the State Board of Health for diphtheria immunization and pre-school clinics. He said that it was the usual experience that such a plan increased the work of the private physician. It was distinctly understood that compensation for the work done in each county should be fixed by the physicians cooperating in the campaign, the State Health Department furnishing the toxin-antitoxin or toxoid at the stated cost of $.086 per complete immunization. The plan was discussed and commended by all the councilors, following which a motion was made and adopted that the Council endorses Dr. Draper's plan for diphtheria immunization clinics throughout the State, in the counties and cities, and recommends the whole-hearted support of the Medical Society of Virginia in carrying out the project.

Dr. Draper's Letter to Dr. Harrison

"Because of the marked increase of diphtheria within the State during the past few months, and the expressed concern of many citizens in having effective measures carried out for the control or eradication of this disease in future years, the State Department of Health desires to present to the physicians of the State, through the Medical Society of Virginia, a plan whereby the resources of the State and local health agencies may be made available to aid the physicians in administering diph-

theria immunizations to a considerable proportion of the children of the State between the ages of six months and fifteen years.

"The outline of the plan which is presented for your consideration herewith stipulates only those services which the physicians may expect from the health departments and does not attempt to indicate the manner in which the physicians' services should be rendered nor the charges which should be made. It is our hope that these matters will be determined by the physicians of the State through their representatives in the several medical organizations.

"Representatives of the State Health Department will be glad to participate in any discussions of the proposal in which it is believed that they can be of assistance.

"I hope that this proposal may result in action which will accomplish a sufficient number of diphtheria immunizations to materially affect the incidence of this disease during the next season and that it may serve as a basis for the development of future successful cooperative enterprises with the physicians of the State."

Outline of State-Wide Diphtheria Immunization Program, Approved by the Medical Society of Virginia, to be Conducted by the Physicians of Virginia, in Cooperation with State and Local Health Authorities.

Cooperation of the State Department of Health

1. Arrange for the distribution of toxoid or toxin-antitoxin at the price of $.086 per complete immunization.

2. Prepare educational and publicity material regarding diphtheria immunization and secure publication in newspapers and other publications throughout the State.

3. Provide the services of public health nurses to work up the program in counties in which no public health nurses are employed.

4. Provide the services of a clinician skilled in diphtheria immunization technique to hold demonstrations and consultations with physicians who desire such services.

5. Provide direction and supervision of public health personnel engaged in the program and serve as the clearing house for all questions arising in connection with the work.

Cooperation of Local Health Agencies

1. The county health officer or public health nurse will arrange with the secretary of the county board of health to call a meeting of the county physicians to formulate a program of diphtheria prevention clinics in the county.

2. They will communicate with the division superintendent of schools to arrange for the cooperation of the school teachers in furthering the work.

3. They will secure from the superintendent of schools a list of the schools in the county, white and colored, and work out with him a provisional schedule of clinics to cover the county. This schedule will be submitted to the physicians at the meeting called by the secretary of the county board of health.

4. Before clinics are held the county nurse will visit every school in the county and give talks on diphtheria prevention, either to the teachers as a group or with the sanction of the school principals to the whole school assembled, explaining the nature of diphtheria and stressing particularly the need of immunization. She will ask the help of the teachers in getting younger children to the clinics.

5. The county nurse will take to the schools the program of the clinics together with literature, explaining diphtheria prevention. The distribution of the programs and literature will be accomplished through the teachers.

6. The health officer or nurse will issue in the local press an article or several articles dealing with diphtheria prevention and telling of the clinics to be held in the county. (The article on diphtheria prevention will be furnished by the State Department of Health.)

7. The county nurse will arrange with the chairman of the Parent-Teacher Association and also with the School Leagues throughout the county to help in the program.

8. The county health nurse shall call on the ministers and Sunday school superintendents throughout the county, asking for their active cooperation and supplying them with literature from which they can make speeches regarding the campaign.

9. Following the clinics, and in the future, as a matter of routine, on all visits the county health nurse should recommend that all young children should be taken to their family physician to be immunized against diphtheria.

10. The county health nurse will attend the clinics conducted by the local physicians and will see that accurate records are kept of the number of children immunized. A report giving a full account of the clinics with the num-

ber of children immunized will be forwarded to the State Department of Health. (Report blanks will be furnished the nurse from the Department.)

As evidence of the heavy incidence of diphtheria this season, Dr. Draper furnished diphtheria figures for the years 1913 to 1931, inclusive. This table gives the case incidence for eleven months and the death total for only ten months. Cases reported in November and December seem to make it certain that the final mortality figures for 1931 will exceed the 1929 total.

During the Fall of 1926 and Spring of 1927, the last general immunization campaign was conducted. The result of that work was that in 1927 a low record for diphtheria occurred in the State and this notwithstanding a general rise throughout the country. Reference to the table shows that the case total for eleven months of 1931 exceeds any twelve months' total since 1923.

State of Virginia
Diphtheria

Year	*Cases*	*Deaths*
1913	3,313	302
1914	3,600	340
1915	5,326	374
1916	3,160	316
1917	2,438	221
1918	1,543	216
1919	3,314	278
1920	4,379	334
1921	5,789	399
1922	7,109	463
1923	4,656	337
1924	3,287	216
1925	3,065	238
1926	3,111	223
1927	2,634	154
1928	2,359	186
1929	2,625	214
1930	2,217	172
1931*	3,905	110

*Cases through November.
Deaths through October.

We hope all Virginia doctors will cooperate in the furtherance of this plan which, after an interested discussion in your Council meeting, received the full endorsement of that body.

Rockbridge County Health Testing Program.

The health of the school child has received considerable attention in the past few years. As a result of this some very excellent work has been done. I wish to call the special attention of any who may be interested in child health to the following health summary by Dr. Charles E. Myers, State Department of Education, of the report of Superintendent R. M. Irby, of work done in Rockbridge County, Virginia, in 1930-31:

(Signed) W. P. Jackson, M. D., *Chairman, Child Welfare Committee, Medical Society of Virginia.*

Mr. R. M. Irby, Superintendent of Rockbridge County Schools, Virginia, has found that his health program which he has emphasized for several years pays big dividends in better pupil progress and in lower school costs.

Rockbridge County has had a standard Virginia Health Unit at work for five years. A county nurse had been employed in 1920, but had not worked continuously until the health unit was organized in February, 1927. The unit consists of a health officer, a sanitary engineer, a nurse and a clerk. Though this health unit is not a part of the school organization, its program is coordinated with the general educational program of the county and much of its work is done in the schools or through cooperation with them.

Under these conditions the health of the school children has been definitely advanced as measured by the "Five Point" program. A child is a "Five Pointer" if his eyes, ears, teeth, nose, throat, and weight meet definite standards or receive specified medical attention. During the past four years the number of "Five Point" children in Rockbridge County has been increased from 258 or 6 per cent of the enrollment in 1926-27 to 1400 or 28 per cent of the school enrollment ni 1930-31. Similar percentages for the State of Virginia are 8 per cent and 22 per cent for 1927 and 1931, respectively. Superintendent Irby's comparisons are made with the fifth, sixth and seventh grade pupils.

In educational advancement as measured by the Otis Classification Test and weighted for the pupils' abilities to learn, the "Five Point" pupils:

In the fifth grade are 3 months ahead of the defective group.

In the sixth grade are 8 months ahead of the defective group.

In the seventh grade are 12 months ahead of the defective group.

The percentage of failures in the defective groups is greater than in the "Five Point"

groups. The tabular statement below presents the facts:

NUMBER OF PUPILS, PER CENT "FIVE POINT" PUPILS, AND PER CENT OF "FAILURES"

Grade	No Pupils	Per Cent "Five Pointers"	Per Cent Failures "Five Pointers"	Defectives
5	375	45	23	29
6	314	54	13	28
7	316	56	14	24
Total	1005	49%	17%	27%

Superintendent Irby estimates that one-third of the failures in his county are due to defective health, and that the reteaching of these failures costs the county approximately $12,000 a year. The average defective child must spend one more year in school to complete the seventh grade than is required for the "Five Point" child. As measured by the subjective judgment of the teachers, represented by percentages failing, and as measured by standard tests, the "Five Point" group is far in the lead.

The two groups numbered 514 "Five Pointers," and 401 "Defectives." Hence the groups are evenly divided and large enough to give reliable averages. The differences are significant from every point of view and constantly and harmoniously point in the same direction.

A comparatively small expenditure for health service for school children not only brings big returns in reducing human suffering and increasing life but will go a long way toward stopping a serious financial and social waste caused by teaching and reteaching, and attempting to reteach children who are in no condition to learn. As a means of reducing waste of public school funds, if for no other purpose, an efficient health service should be maintained for all public school children.

Woman's Auxiliary, to the Medical Society of Va.

PRESIDENT—*Mrs J. Allison Hodges*, 5511 Cary Street Road, Richmond.

PRESIDENT-ELECT—*Mrs. W. P. McDowell*, Larchmont, Norfolk.

SECRETARY—*Mrs. James K. Hall*, 3011 Seminary Avenue, Richmond.

TREASURER—*Mrs. Reuben F. Simms*, 2034 Park Avenue, Richmond.

The Auxiliary to the Richmond (Va.) Academy of Medicine,

At its annual meeting on January 22nd, elected the following officers for the ensuing year: *President*, Mrs. Lee E. Sutton; *first vice-president*, Mrs. J. B. Dalton; *second vice-president*, Mrs. Austin I. Dodson; *secretary*, Mrs. Harry B. Hinchman; and *treasurer*, Mrs. J. W. Hannabass.

Mrs. N. Thomas Ennett, the retiring president, did a great deal of constructive work, during her term of office, for undernourished children. The closing event of her administration was a card party which netted quite a nice sum.

The Woman's Auxiliary to the Southern Medical Association

Held its eighth annual meeting in New Orleans, La., November 18-20, 1931. The president, Mrs. S. A. Collom, of Texarkana, Texas, presided. After greetings had been extended from the local and state auxiliaries, Mrs. A. B. McGlothlan, St. Joseph, Mo., national president, extended greetings from the Auxiliary to the American Medical Association and invited those present to return to New Orleans, in May, 1932, to attend the meeting of the Auxiliary to the A. M. A.

The chairman of Organization reported that there are fourteen States and the District of Columbia included in the S. M. A. group, with a membership of 4,947, and that all States were organized except Maryland. Interesting reports were also made by other committees.

Mrs. Charles E. Oates, Little Rock, Ark., succeeded to the presidency. Mrs. A. A. Herold, Shreveport, La., was elected president-elect; Mrs. J. Bonar White, Atlanta, Ga., recording secretary; Mrs. Mabel Mason, Lumberton, Miss., treasurer. The next meeting of the Auxiliary is to be held in Birmingham, Ala., in November, 1932.

AIMS AND PURPOSES OF THE AUXILIARY OF THE SOUTHERN MEDICAL ASSOCIATION

Mrs. C. W. Garrison, Little Rock, Ark., a former president, states that the aims and purposes of the Auxiliary are as follows:

"To keep the original aim constantly before the Woman's Auxiliary to the Southern Medical Association, to which may now be added the two projects—the Jane Todd Crawford Memorial and the collection of data for Romance of the Medical Men of the South, and to pursue these with a continuity of purpose until our efforts are crowned with ultimate success will be an objective worth all the time,

interest and energy expended in its accomplishment.

"If we can then come together in annual convention imbued with the spirit of the preamble to our constitution to hear and discuss reports of the progress made in the twelve-month period, the Association cannot but have each year a closer bond of friendship and sincere loyalty to a just and beautiful cause."

Items of Interest.

Each month, Mrs. Milton P. Overholser, of Harrisonville, Mo., chairman of the Committee on Press and Publicity of the National Auxiliary, sends out a news sheet with items of interest in regard to the work being done in the various States. Two features strongly stressed are "Liaison With Outside Groups" and the placing of *Hygeia*, the magazine for health, in as many schools and homes as possible. Student loan funds are promoted by some States and medical history comes in for its share of interest.

The following paragraphs are taken from Mrs. Overholser's last report:

"Of Kentucky's plan for a Jane Todd Crawford Memorial every Auxiliary woman (and every other woman) in the nation should be informed. Briefly this Memorial will honor that brave pioneer woman of Kentucky, who in December, 1809, before the days of any anesthetics, underwent voluntarily the first ovariotomy. The courage and skill of the surgeon, Dr. Ephraim McDowell, was met by the courage, faith, and self-control of this noble woman.

"The literally thrilling story of this operation has been placed in the hands of every State Auxiliary president. May some plan be evolved by which the story may be known by every Auxiliary woman in America.

"A monument to Jane Todd Crawford should be to all of us a symbol of courage, willpower, self-control and faith, qualities which she exemplified; and to share in the creation of this memorial should be esteemed a privilege."

"When you—the many of you—are in New Orleans, May 10th-16th and are looking at the 'exhibits' from the various State Auxiliaries, your attention will be arrested by the unique and very clever 'Formula' from Philadelphia. It must be seen to be appreciated, and its designer, Mrs. Wilmer Krusen, will understand the compliment implied when you construct a pattern of it to take back to the home Auxiliary. It constitutes a most alluring invitation to attend the Auxiliary meetings and share activities.

"In 1931 the National Tuberculosis Association issued a timely small folder 'Go to Your Doctor Before He Has to Come to You,' a folder that should be known and heeded by all men, women and children. It energetically supports the idea of Periodic Health Examinations. Pennsylvania has a Periodic Health Examination Chairman, Mrs. John H. Page, who is ably promoting this project and getting results. Here is her appeal:

PERIODIC HEALTH EXAMINATION

"One out of six applicants for life insurance are declined or postponed. The annual health audit will detect albumin or sugar, high blood pressure, slight cardiac disorder, incipient tuberculosis, beginning neoplasm, and any and everything else. Your family physician will do the rest. Why does it profit a person to be an ostrich with his ailments, or like the Spartan youth to hide a disease until it gnaws out his vitals? Get the disease before it gets you. Get it early. Get it before you think you have it.

"People have too long had such faith and confidence in their physician that they think he can cure anybody who has not been dead over three days. The profession admires the faith of their clientele, but dislikes to be put in such superlative and unequal tests.

"If elevators are inspected regularly, why not one's mouth and teeth? If a boiler must be examined regularly, why not your heart and lungs? You have tested the brakes on your car, why not the kidney function? You have your watch regulated, but not your diet. You have your batteries charged, but let your weight run down from disease.

"Should the most complex and wonderful machinery in the world, that not made with hands, be allowed to become broken or impaired, to corrode or degenerate? Neglect your business if you must, neglect your golf if you can, neglect your wife if you dare, but don't neglect your physician and a yearly physical examination and health inventory on your birthday."

National Meeting.

At the meeting of the Auxiliary to the

Southern Medical Association in New Orleans in November, 503 women registered. All had a delightful time in that lovely Southern city.

The National Auxiliary is to meet there May 9th-13th, at the time of the American Medical Association. No one who can attend this convention should miss it as it will be a wonderful opportuntiy. Get "your doctor" to plan to attend and to take you.

Hygeia.

This is a splendid magazine for the layman as well as the doctor's family and is a'ready in many Virginia homes and schools. We wish, however, to have many. many more subscribe to it. Ask your local chaiman about it.

Memorial File.

At the meeting of the Board of Directors of the Woman's Auxiliary to the American Medical Association in Chicago, last November, it was voted that "each state president be asked to appoint a chairman to send in at the end of the fiscal year to a National Chairman, appointed by the president, the names of those state Auxiliary members who have passed away."

The national office wants to clear the membership files of names of deceased members and place these names in a memorial file or book.

Each Auxiliary in Virginia is asked to report names of any members who have died to our State President, Mrs. J. Allison Hodges, 5511 Cary Street Road, Richmond, Va., *at once*, as she in turn has to report them to the National Auxiliary before April 1st. If you know of any member from the State at large who has passed on, some friend is asked to report that name.

Truth About Medicine

In addition to the articles enumerated in our letter of December 24, 1931, the following have been accepted:

Abbott Laboratories
- Ampoules Potassium Bismuth Tartrate—D. R. L., 2 c.c.

Ciba Co., Inc.
- Sugar Coated Tablets Lipoiodine—Ciba, 0.3 Gm.

Cutter Laboratory
- Diphtheria Toxin for the Schick Test, 10 test doses
- Tuberculin B. F. (Bovine)
- Typhoid Vaccine, 20 c.c. vial

Gane & Ingram, Inc.
- Phenobarbital Sodium—Gane and Ingram
- Tablets Phenobarbital Sodium—Gane and Ingram, 1½ grains.

Gilliland Laboratories, Inc.
- Scarlet Fever Streptococcus Antitoxin (Refined and Concentrated)

Lederle Laboratories, Inc.
- Brucella Melitensis Vaccine—Lederle
- Normal Horse Serum (1:10 Dilution) for the Conjunctival Test

Eli Lilly & Co.
- Diphtheria Toxin for Schick Test, Diluted Ready for Use—Lilly.

Mead Johnson & Co.
- Mead's Powdered Brewer's Yeast Tablets

United States Standard Products Company
- Antimeningococcic Serum Polyvalent

Winthrop Chemical Co., Inc.
- Sterile Solution Skiodan (40% by volume)

Nonproprietary Articles
- Brucella Melitensis Vaccine
- Phenobarbital Sodium

Propaganda for Reform

Ovaltine Not Acceptable.—The Committee on Foods reports that Ovaltine is a chocolate flavored dry malt extract, containing a small quantity of dried milk and egg, which is sold with two slogans: "A food beverage" and "A food concentrate." From its examination of the product, the Committee concludes that Ovaltine is essentially a carbohydrate food, and that its value in gaining weight is no more nor less than that of other similar carbohydrate mixtures, and that Ovaltine is sold with grossly exaggerated claims; its composition is kept a mystery, and that even if it did contain what the manufacturer says it does, it could not do the things the manufacturer says it will. The Committee has listed Ovaltine with the products not acceptable. (Jour. A. M. A., December 12, 1931, p. 1798).

Panaceas for the Common Cold.—With the first blasts of wintry air a considerable number of our citizenry begin to develop the running of the nose, the lacrimation, the depression, the fever and the other symptoms commonly associated with the onset of a cold. From the teachings of the hygienists, the sanitarians, the public health writers and physicians, most of the public have learned that the symptoms can be abated and the cold controlled in the majority of instances if the patient will go promptly to bed and stay there for at least three days. However, few follow this advice. The promoters of various types of devices and foods associated with health maintenance have been prompt to take advantage of every possibility for exploiting their materials in connection with the universality of the common cold. Vitamin D has been vaunted for this purpose in the form of ultraviolet rays, cod liver oil, cod liver oil concentrates, irradiated foods and whatnot, notwithstanding the fact that there is not the slightest scientific evidence to indicate that excess of vitamin D will prevent a cold or have any effect in curing it. Because of reports that in mice an excess of vitamin A favorably affects the tissue of the respiratory tract, the National Dairy Company through one of its susidiaries, advocates the use of milk as a means of preventing colds; for this claim there is not adequate evidence. (Jour. A. M. A., December 12, 1931, p. 1802).

The Intravenous Use of Barbital Compounds.—The Council on Pharmacy and Chemistry reports that more than seven years have elapsed since the introduction of the intravenous use of barbitals, sufficient time to justify an assay of the possible value of the method. Since the chief object of the intravenous use has seemed to be the possible employment of barbitals used in this way to produce anesthesia, the Council reports on the possible changes following intravenous injection, a compari-

son of the experimental and clinical results, and attempts to determine if the intravenous use has peculiar advantages over other methods of administration, with equal safety. The Council points out that there is no doubt that the characteristic hypnotic action of the barbitals can be obtained by oral administration; that since the barbitals act essentially as hypnotics, and not as anesthetics, it is reasonable to entertain doubts about radical departures from the orthodox usage of these drugs, but the new methods of using and new uses for well known drugs merit attention; and that, moreover, the intravenous use of barbitals has been widely exploited by some manufacturers and serious attention has been given to the subject experimentally and clinically. From an exhaustive review of the literature it is concluded that any advantages that may exist in the choice of barbitals as aids in anesthesia, or as sedatives, analgesics or hypnotics, can be easily procured by giving them by mouth, with the further advantage of avoiding the necessity of the small operation and aseptic technic for intravenous injection and the unnecessary disturbances and complications of such injections in general, and that about the only argument in favor of the intravenous route would be an occasional rapid action in an emergency, and that hence their intravenous use should be limited for the present to conditions in which oral administration is not possible or when a very prompt action is imperative. (Jour. A. M. A., December 19, 1931, p. 1886).

Malignant Conditions in Radioactive Persons.—In 1925, Martland reported cases of anemia and of necrosis of the jaw in persons who had been employed in painting watch dials with paint made luminous by the addition of radium, mesothorium and radio-thorium. During several years previous to 1924, 800 girls did such work in a New Jersey factory. The girls swallowed small amounts of radioactive paint day after day as a result of pointing the brushes with the lips. Some who had worked for one or more years developed necrosis of the jaw and anemia, from which, up to 1928, thirteen died. Now, however, another pathologic condition seems to have arisen among the employees who swallowed radioactive paint. Since 1928, rapidly growing osteogenic sarcomas have appeared in at least eight cases. In consideration of recent developments the high incidence of primary carcinoma of the lungs in the cobalt miners of Schneeberg and in the pitchblende mines of Joachimstahl, and the various lesions produced by external exposure to radium and X-rays, demand investigation, and many of the radioactive substances sold to the public for the cure of various ailments may be dangerous to health. Testifying against the interstate sale of vials of mesothorium and radium which were to be injected after being dissolved in water, Martland reported that he had examined two patients who had taken such water from one to two years and found both to show radioactivity, and both had extensive necrosis of the upper jaw. Martland states that waters which contain only emanation are frauds and he doubts whether they are harmless. The drinking over long periods of time of radioactive waters containing radon, and the drinking of natural radioactive waters, should be discouraged. Martland likewise cautions against the intravenous injection of long lived radioactive elements. (Jour. A. M. A., December 26, 1931, p. 1968).

Oysters—A Pleasant Type of Therapy.—The announcement three years ago that copper is effective in supplementing iron in the cure of anemia produced by an exclusive milk diet in the rat promptly aroused interest. The inferences drawn by others than the investigators themselves has led to confusion and mistaken advice. There has been no warrant whatever in applying the observations without reservation to some of the unusual conditions of the blood, such as pernicious anemia in man. At the moment there is some debate whether copper stands alone in the capacity to promote the function of the iron in hemoglobin and blood cell formation. Other elements, such as manganese and germanium, are clamoring for equal recognition. Meanwhile all sorts of new products containing both iron and copper are foisted not only on the ignorant public but also on an uncertain medical profession. The chief objection to such unproved therapy is the sense of false security which leads to the neglect of other modes of therapy that may be far more effective. Recent investigations have shown oysters to be capable of curing the nutritional anemia of milk-fed rats. The studies indicate that the inorganic elements present in the oyster are responsible for its hemoglobin regenerating capacity and that the antianemic potency of the oyster can be accounted for on the basis of its content of the three elements, iron, copper and manganese. (Jour. A. M. A., December 26, 1931, p. 1970).

Book Announcements

Surgical Errors and Safeguards. By MAX THOREK, M. D., Surgeon-in-Chief, The American Hospital, Chicago; Attending Surgeon, Cook County Hospital, etc. With a Foreword by ARTHUR DEAN BEVAN, M. D., Professor and Head of the Department of Surgery, Rush Medical College of the University of Chicago. Philadelphia. J. B. Lippincott Company. 1932. Octavo of 696-xiii pages. 668 Illustrations, many colored. Cloth. Price, $10.00.

The Story of Medicine. By VICTOR ROBINSON, M. D., Professor of History of Medicine, Temple University Schools of Medicine, Philadelphia. Albert & Charles Boni. New York. 1931. Octavo of 527 pages. Cloth. Price, $5.00.

Psychology and Psychiatry in Pediatrics: The Problem. Report of the Subcommittee on Psychology and Psychiatry, Bronson Crothers, M. D., Chairman. White House Conference on Child Health and Protection. The Century Co. New York. 1932. Octavo of 146 pages. Cloth. Price, $1.50.

Body Mechanics: Education and Practice. Report of the Subcommittee on Orthopedics and Body Mechanics, Robert B. Osgood, M. D., chairman. White House Conference on Child Health and Protection. The Century Co. New York. 1932. Octavo of 164 pages. Price, $1.50.

Origin of Cancer. The Specific Cancer Cell of Carcinoma, Contrasted with the Normal Matrix Embryonal-Cellule of Primal Ovum Days, to Eighth Week; From Which the Cancer Cell is Directly Descended. Cancer Not Epithelial. Sarcoma Not Connective Tissue. By FRANK A. STAHL, M. D., Rush, 1887. One-time Demonstrator of Obstetrics, Rush Medical College, Chicago, Illinois. 1932. 49 Plate Illustrations, 41 Personal and Original With Explanations. Octavo of 96 pages. Paper.

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Editorial

Primary Carcinoma of the Lungs.

A recent paper* directs attention to this rare disease of the lungs. It is of interest particularly for the reason that attention is drawn to a group of signs, symptoms and history, suggestively characteristic. Such a grouping is always worthwhile for the general practitioner and physician. To them physical findings of the chest are a daily consideration. To them discussion or review of findings in the examination of the lungs offers occasion for thought and study. The author points out that in cases of carcinoma, if uncomplicated by coexisting tuberculosis (a condition often prevailing), the patient, being of cancerous age, holds that only for a short time have there been any pulmonary difficulties. Usually, the story begins with an attack of recent bronchitis or pneumonia. Since this, these patients usually say they have never been free of one or another sort of lung symptom. There may have been several attacks of pneumonia. There has been usually pain; pain over the lung has been persistent. There may have been hemorrhage; hemorrhage may have been small in amount but persistent or it may have been copious. There may have been dyspnea appearing gradually or suddenly, associated often with asthmatic signs. Besides, physical examination usually discloses: (a) high position of the diaphragm on the affected side; (b) paradoxical respiration with a seesaw movement of the diaphragm; (c) pendulum movement of the heart, influenced in its swing by being drawn to the affected side during inspiration and to the opposite in expiration: (d) coalescence of flatness of infraclavicular region with substernal heart distress. The author reports six cases illustrating the points of his text. In these histories practitioners may find examination-reports of interest in impressing the "ear marks" of this rare pulmonary disease. The remembrance of certain general groups of signs and symptoms can but aid one in his quest for a diagnosis in the rarer and more unusual diseases of the chest.

*Palevski: Arch. Int. Med., Vol. 48, No. 6, page 1126.

Roentgenologic Diagnosis of Early Pulmonary Tuberculosis.

Almost all cases of incipient tuberculosis in adults, says Kirklin,† may be divided in o two groups. Any such generalization arrests the attention, naturally, of the practitioner. One notes that in the first group, which is by far the greater, the earliest significant sign is a relatively faint shadow in an upper lobe, more often the right. Stereoscopically, this dense region (or shadow) is conical in shape with its base toward the periphery and apex toward the hilum; it is obliquely below the clavicle, usually in the first, but occasionally in the second interspace. Its appearance has been likened to that "of a caterpillar's web woven about an outer branch of a tree."

In the second group, lesions are more or less spherical in form and are situated in the outer parenchymatous portion of the lung; they are multiple, grouped variously but some-

†Proceedings of the Staff Meetings of the Mayo Clinic, December 2, 1931, page 709.

times singly with a diameter from one to two m.m. These are faint shadows but denser in the center than at the periphery.

To sum up, the X-ray diagnosis of an early tuberculous infection rests upon a combination of its location below the clavicle; the roughly conical or spherical form of the lesions; the softness and lack of marginal definition of the shadows; and an accentuation of the tributary broncho-vascular structures.

Bronchiectasis, malignant metastasis, accentuation of broncho-vascular markings without corresponding parenchymal shadows, localized simple pneumonitis, notes Kirklin, are conditions simulating the early signs of pulmonary tuberculosis of the lung and should be kept in mind in considering such findings.

Spontaneous Pneumothorax.

The management and treatment of chronic tuberculous patients brings the physician often face to face with a sudden change in the clinical picture. This change may be produced by a sudden or gradual accumulation of air in the pleural sac.

Pneumothorax of some proportion changes materially physical findings of a chest and is a phenomenon that may mystify the clinician for the moment if not for a longer period. It is a clinical entity that often appears suddenly. Accumulation of air in the pleural cavity changes the chest pattern to inspection, palpation, percussion and auscultation. Inspection brings out the fixation of the affected side; the great dyspnea, the cyanosis, the protrusion of the heart to the intercostals in the right when pneumothorax is in the left. Palpation discloses an absence of tactile fremitus, and elicits the liver in right-sided pneumothorax well down from the costal margin. Percussion brings varied sound phenomena. These signs are varied and modified by the side affected, by tension with the pleural cavity, by the amount and location and changing levels of fluid as the body assumes a change of position. The character of the fluid whether serous or purulent brings a difference in the levels, the latter being less changeable. Percussion notes obtained may be tympanitic at one level and dull at a lower level on the chest. Auscultation reveals feeble, distant breath sounds or an absence of breath sounds. In these there may be sounds of an echoing, amphoric or cavernous quality. Vocal fremitus is absent or diminished. The succussion splash, the metallic tinkle, the water whistle noise (broncho-pleural fistula), may be elicited. Diagnosis is more difficult in case of small pneumothorax but in large pneumothorax, physical findings may be much more easily brought out and interpreted. The X-ray examination of such patients clearly visualizes the collapsed lung and the presence of fluid, if in any considerable amount. The aid of the roentgenologist is important in these cases and should be sought without delay, but in some instances in private practice in small towns or country sections, the physical findings must be depended upon.

Causes of pneumothorax may be arranged in the following manner: Tuberculosis, clinically demonstrable or not, is the most common cause. It is generally agreed that tuberculosis is present as a cause in 80 to 90 per cent in the adult. Among other causes, some of which may be associated with tuberculous pathology, are empyema, gangrene, pneumonia, pulmonary infarct, bronchiectasis, emphysema. Besides, there are a group of pneumothoraces which are called idiopathic. But idiopathic cases, it is believed, are so called because there has been inadequate diagnostic inquiry. These cases are probably due to tuberculosis or pulmonary infection, in one or another form. In addition to tuberculosis or other of these fundamental etiologic factors, exciting acts as coughing, sneezing, laughing, vomiting, hiccoughing, muscular strains, and forceful defecation act as immediate causes of the rupture.

Besides, in its association with tuberculosis, pneumothorax may take place without striking symptoms. Very insidiously, air may accumulate in the pleural sac without knowledge of it by physician or patient, at the outset. In other cases, the symptoms occurring at the time of such exciting causes as coughing, sneezing, vomiting, laughing, etc., are a feeling of stifling pain, sudden and knifelike, air hunger, feeling of suffocation; probably cyanosis and labored breathing. Such patients cannot be satisfied or comforted. No position relieves, lying down or sitting up—finally, only getting down on the affected side relieves. Within twenty-four hours pain is less but a sense of dullness and fullness takes its place and a few days after the onset signs of accumulation of fluid at the base, and air pressure above, appear.

Syphilis of the Lung.

A recent article by Denman,* discussing this subject and reporting a case of autopsy findings of it, furnishes us with subject matter for comment.

The rarity of the disease makes its review somewhat more interesting for, in doing so, one may consider the inquiry recently made and submitted to the reading medical public. The history of the case that forms the basis of the paper is worth reading for it gives a background for the findings, by X-ray and autopsy. The condition is rare and is seldom discovered in clinical examination. Denman states it is reported, in a search through the museums of the London Hospital and the Royal College of Surgeons, that only twelve cases were found with two of these doubtful; that Johns Hopkins Hospital reports only twelve cases in 2,800 autopsies; that in Massachusetts General Hospital's 3,000 autopsies, only one case was found; that in Symmers' study of 4,800 autopsy protocols, with 314 showing lesions of syphilis, there were twelve cases and two additional of syphilis of the pleura; that of 110,258 admissions to Kings' County Hospital (1919-1925), the number of cases diagnosed by positive Wassermann reactions was 5,695, but that none of these cases were diagnosed as syphilis of the lung. This gives an idea of the rarity of the condition. But it does occur and probably occurs oftener than recognized.

It may occur in its congenital form, the pathology being in the form of a diffuse fibroplastic proliferation with an interstitial infiltration of small round cells. In this type in the still-born the condition has been called white pneumonia.

In the acquired form, there is a chronic interstitial pneumonia (syphilitic phthisis). The process may be in the form of gummata. Rössle, reports Denman, differentiates four types: a cavernous syphilitic phthisis, a gummatous coarse fatty form, a coarse lobulated syphilitic scarred lung, a coarse syphilitic callosity without pronounced changes of the exterior shape.

Finally, a paragraph from Denman's paper makes the matter of diagnosis of interest by stating that the diagnosis of pulmonary syphilis by roentgen ray is difficult because there is no characteristic picture, that the diagnosis should be made only by the history, a positive Wassermann reaction, and the result of an antisyphilitic course of treatment, that in all cases, pulmonary syphilis should not be diagnosed until "every other possible type of pulmonary disease is excluded."

*Denman—Annals of Internal Medicine, Vol. 5, No. 7, page 895.

Pulmonary Tuberculosis With Indefinite or no Usual Abnormal Physical Signs.

The chest remains largely the responsibility of the family physician and the general practitioner. For it is the family physician, probably, who first is consulted about pulmonary symptoms or about symptoms of a general constitutional nature. In these times, especially, must the practitioner be on the lookout for such indefinite and obscure conditions as an ill-defined pulmonary tuberculosis, because with economic conditions as they are, the probability for delay in consulting physicians is extremely great. Pulmonary tuberculosis with indefinite or no usual abnormal physical signs may be present. Only very careful examination by physical methods and coincident roentgen ray examinations will disclose certain cases of early pulmonary tuberculosis. Following upon a winter with its infections of the respiratory tract, one may wisely keep in mind the extreme possibility for pulmonary tuberculosis activity. An article on this subject by Lawrason Brown,* of Saranac, emphasizes the importance of careful scrutiny of suspected cases by the roentgen ray studies of the chest. He lays considerable emphasis on roentgen ray examination. It is only by this method in conjunction with careful physical examination that cases of pulmonary tuberculosis may be gotten under treatment in time to bring about an arrest of the process or the establishment of a cure. Brown reports the incidence of five cardinal diagnostic data in 1,367 cases diagnosed pulmonary tuberculosis from 1,478 consecutive cases admitted to the Trudeau Sanatorium:

Tubercle bacilli	61.5 per cent.
Rales	68.5 per cent.
Roentgen ray	99.0 per cent.
Hemoptyses	33.5 per cent.
Pleurisy	12.0 per cent.

*A. J. M. Sc., November, 1931, page 700.

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

Report of Annual Meeting.

Six of the seven members of the Department attended the annual meeting on January 21st: Drs. Call and Draper, representing the Medical College of Virginia and the State Department of Health, Drs. Flippin, H. S. Daniel and R. A. Moore, representing the Medical Society of Virginia, and Mr. Eutsler, Executive Secretary. The present and past presidents of the Society, Drs. Harrison and Hodges; Dr. Sutton, Chairman of the Joint Committee on Prenatal and Postnatal Instruction, and Dr. Baughman and Miss Edwards were also in attendance.

Dr. Harrison reported that, acting under the constitutional power of the president to appoint all committees of the Society, he had consulted with the members of the Advisory Board of the Department of Clinical Education (the Standing Committees on Medical Education and Hospitals and on Scientific Work and Clinics) and with their consent appointed Drs. Daniel and Moore to the vacant positions as representatives of the Society in the Department. The House of Delegates at Roanoke had adopted a resolution instructing the president to appoint "two country physicians" to membership on the Joint Committee; since this Committee is a subsidiary of the Department and the Society's representatives on it had heretofore been drawn from the Department, it was necessary that the "two country physicians" should also be members of the Department.

The resolution of the House of Delegates contemplated the addition of two members to the Joint Committee, it was generally agreed, and the Department passed a motion that the membership of the Committee should be increased from six to eight, provided the two medical colleges cooperating agreed. The appointees of the president to the Joint Committee, Drs. Daniel, Moore and Hodges and Dr. Harrison ex-officio, were unanimously approved.

Dr. Sutton explained the status of the application by the Joint Committee to the Commonwealth Fund for a grant to aid in the work of prenatal and postnatal instruction. The answers to questions raised by representatives of the Fund in regard to the original proposal were approved as an excellent statement of the case. Dr. Draper explained that the next budget meeting of the Commonwealth Board would be held probably in April; the Board had expected to act upon the Joint Committee's application in December but the final papers had not been submitted. Upon his statement that he was to visit the offices of the Commonwealth Fund the next day and would have an opportunity to mention this matter, Dr. Draper was urged to make clear the fact of his membership in the Department of Clinical Education, the full support that would be given to the Joint Committee by the State Department of Health, the impetus gained by the instructional program on account of the general approval of physicians in the State Department's policy of distinguishing sharply between preventive and curative medicine, and the arrangement whereby the University Extension Division as the executive agency of the Committee would be charged with the responsibility of handling and disbursing funds upon the Committee's order.

A report of the Executive Secretary based upon information furnished by medical societies in the State indicated that the larger district and regional organizations seemed to be the groups with which the Department could most effectively cooperate, inasmuch as the urban societies had already developed systematic educational programs and those of the counties were generally inactive educationally. A list of available speakers had been requested by many secretaries and program committees. The preparation of a list composed of professors in the two medical colleges had been begun. In response to the Chairman's question as to whether the list should be confined to the faculties of these institutions, it was unanimously voted that invitations to take part in the work should be extended to every member of the Society.

The Department heartily endorsed the work of the Medical College of Virginia in making reference material available to speakers and physicians generally through a system of library loans.

George W. Eutsler,
Executive Secretary.

An Invitation to Speakers.

In compliance with the action of the Department of Clinical Education as stated in the foregoing report, all members of the Medical Society of Virginia who feel that they can cooperate with the Department in holding clinics are invited to submit to the Executive Secretary their names and the subjects upon which they will speak. Members of the faculties of the two medical colleges will be enlisted, and it is desired that other physicians join with them in contributing their services to this movement. Complete lists of available speakers and subjects will be offered to all societies and committees arranging educational programs.

J. C. Flippin,
Chairman.

Scheduled Meetings

The program of the regular monthly scientific meeting of the faculty and staff of the Medical College of Virginia, Richmond, which will be held on Thursday, March 17, 1932, at 8:15 P. M., in the auditorium of the St. Philip dormitory, will provide a symposium on Fungus Diseases.

The program will be as follows:

1. Dr. Frederick W. Shaw: Etiology and Pathology.
2. Dr. W. B. Graham (Invited Guest): Allergy.
3. Dr. Dean Cole: Respiratory System.
4. Dr. J. Powell Williams: Alimentary Tract.
5. Dr. Thomas W. Murrell: Skin and Appendages. (Lantern Slide Illustrations).

The profession is cordially welcome to these meetings. Upwards of a hundred were present at the January meeting.

All-Day Clinic

The Norfolk County doctors plan to have an all-day clinic, March 30th, in Norfolk, at St. Vincent's and the Protestant Hospitals for the Second Congressional District.

Dr. J. L. Rawls is chairman of this Clinic Committee and has arranged a special meeting for eight o'clock that night, at which time Dr. Daniel L. Borden, Professor of Surgery at George Washington University School of Medicine, Washington, D. C., will deliver an address illustrated with lantern slides.

Proceedings of Societies

Virginia State Board of Medical Examiners.

At the December, 1931, meeting of the Board, there were for examination only six, the smallest class for quite a long time. Of these, five obtained their certificates.

Of the remaining eighteen, fifteen were granted certificates through reciprocity, two upon the endorsement of the National Board, and one upon the basis of his commission in the Navy. Below is given list of applicants granted certificates:

Applicants Granted Certificates

Dr. James Edward Amiss ----------Luray, Va.
Dr. Charles Henry Armentrout-------Richmond, Va.
Dr. Wilbur A. Barker ----------University, Va.
Dr. Albert T. Brickhouse ----------Hopewell, Va.
Dr. M. Melvin Clark ----------Richmond, Va.
Dr. Louis Philip Cox ----------Fredericksburg, Va.
Dr. Alexander C. Davis ---------Newport News, Va.
Dr. James Hugh Earley----------Washington, D. C.
Dr. Thomas A. Gibson ----------Birmingham, Ala.
Dr. Herman Lee Harris ----------Bluefield, W. Va.
Dr. Milton E. Holmes----------Washington, D. C.
Dr. Royal D. Keene ----------Danville, Va.
Dr. Harvey W. Kline ----------Philadelphia, Pa.
Dr. Carlisle S. Lentz ----------University, Va.
Dr. John S. McKee, Jr. ----------Philadelphia, Pa
Dr. Charles Edwin McNamara----Washington, D. C.
Dr. Wilmer H. Paine ----------Charlottesville, Va.
Dr. Charles H. Patterson ----------Lynchburg, Va.
Dr. Charles H. Reagan ----------Bristol, Tenn.
Dr. James Edward Shields, Jr.------Petersburg, Va.
Dr. Harold Brown Webb ----------Waynesboro, Va.
Dr. Dudley Williams ----------Baltimore, Md.
Dr. Tiffany Johns Williams ---------University, Va.

The Mid-Tidewater Medical Society

Held its regular quarterly meeting at West Point, January 26th, with Dr. R. D. Bates, president, in the chair. The meeting was opened with prayer by Rev. A. P. Gray. The morning session was taken up with business of the society, and several constructive measures were discussed and adopted for the help of the rural physicians. Following this, the members and their visitors were entertained at lunch by the local committee consisting of Dr. W. E. Croxton, chairman, Drs. W. S. Cox, M. H. Eames, J. R. Parker and M. H. Harris.

A very enjoyable and instructive program was presented in the afternoon by members of the staff of the Hospital Division of the Medical College of Virginia. Dr. W. T. Sanger, president of the college was present and made a few remarks. Dr. L. E. Sutton read a paper on "Schick Test and Immunization Against Diphtheria"; Dr. H. H. Ware talked on "The Value of the Rabbit Ovulation Test"; Dr. Wm. B. Porter discussed "The Treatment and Classifications of Anemias"; and Dr. I. A.

Bigger concluded the papers with a discussion of "Infections of the Hand." Members of the society discussed each paper at length. Other visitors were Drs. Henderson, Williamsburg, Va., Davis, Johns, Rucker and Bagby from Richmond. Members present were Drs. Croxton, DeShazo, Eames, Smith, Sandberg, Campbell, Lewis, Parker, Cox, Gwathmey, Clements, Gouldin, Ferry, Tabb, Bates, Darracott and Harris.

The society voted to meet next at Saluda, on the fourth Tuesday in April.

RESOLUTIONS ADOPTED BY THE MID-TIDEWATER MEDICAL SOCIETY

RESOLVED, That the Mid-Tidewater Medical Society go on record as favoring the reporting of findings on all patients, private or charity, to the referring doctors by the two state supported hospitals, that is, the Hospital Division of the Medical College of Virginia and the University of Virginia, as a most direct and definite means of educating the physicians in the country districts, and that copies of this resolution be filed with the chief of the staff of the two hospitals above mentioned and with the chairman of the Department of Clinical Education of the Medical Society of Virginia.

M. H. HARRIS, M. D.,
Secretary.

WHEREAS, the society has been sent a questionnaire, which has been duly answered expressing the views of the society, we feel that the further expression of our wishes may be helpful to the department, and we hereby submit the following resolution:

BE IT RESOLVED, That the Mid-Tidewater Medical Society go on record as heartily endorsing the postgraduate education of doctors of the rural districts and desire to extend to the committee its willingness to cooperate with it in its program to this end, and that this society respectfully suggests to the department that we feel that this program should be wholly of a practical character, such that the information and facts revealed at the meetings and clinics may be such as may be put into active practice in the remotest country districts by the rural practitioner;

AND FURTHER, we feel that these clinics and other programs put on will will be further beneficial to the country doctors if they are conducted wholly and solely with the idea of their utility to the country doctors;

AND THEREFORE, we, the members of the Mid-Tidewater Medical Society, composed only of rural doctors, wish to also desire the cooperation of city colleagues in this matter that we may thus be enabled to render more scientific and better service to our patients in the remote country districts.

M. H. HARRIS, M. D.,
Secretary.

The Lee County Medical Society

Held its annual meeting on January 18th, at which time the following officers were elected for the ensuing year: President, Dr. G. B. Setzler; vice-president, Dr. J. B. Muncy; and secretary-treasurer, Dr. W. J. Innes, all of Pennington Gap. The board of censors is composed of Drs. T. B. Ely, Jonesville, C. H. Henderson, St. Charles, and C. S. Gresham, St. Charles.

The Rockbridge County Medical Society

Met at Jackson Hospital, Lexington, Va., for its February meeting, with Dr. F. L. Thurman, of Buena Vista, presiding. Dr. Charles Groseclose, of Buena Vista, reported two cases of Acute Leukemia, and Dr. Reid White, Jr., of Lexington, reported a case of Agranulocytic Angina in a Boy of Fifteen. These reports were unusually interesting, in spite of the fact that all three patients died.

The Society voted that the Local Health Unit immunize the children of the county during the coming immunization campaign against diphtheria.

Officers elected for the coming year are as follows: President, Dr. F. L. Thurman (re-elected), Buena Vista; first vice-president, Dr. C. H. Davidson (re-elected), Lexington; second vice-president, Dr. Thomas F. Kennan, Raphine; secretary-treasurer, Dr. E. P. Tompkins, Lexington.

Roanoke Academy of Medicine.

At the meeting of the Academy on January 4th, papers were read by Drs. E. G. Gill, K. D. Graves, L. D. Keyser and W. P. Jackson. Dr. Gill's case report was illustrated by motion pictures, lantern slides and demonstration of the patient.

The meeting on February 1st was a dinner meeting and the papers were presented by invited guests: Drs. Thomas R. Boggs, professor of Clinical Medicine at Johns Hopkins University, Baltimore; Dr. Robert L. Payne, Norfolk, Va.; and Dr. Deryl Hart, professor of Surgery at Duke University, Durham, N. C.

At this meeting the Academy presented Dr. S. J. Gill with a watch, he having reached his seventieth birthday. The presentation speech was made by Dr. R. H. Garthright of Vinton, who was similarly honored in 1928.

Dr. Everett E. Watson, Salem, is president of the Academy, and Dr. Charles H. Peterson, Roanoke, secretary.

The Augusta County Medical Association

Had a very interesting meeting on February 3rd, at which time several papers were read. The next regular meeting will be held on the first Wednesday in May, but a special meeting has been called for the first Wednesday in April, to consider the report of the Committee on By-Laws. Dr. W. C. Roller, Fort Defiance, is president, and Dr. W. F. Hartman, Swoope, is secretary.

News Notes

State Society to Meet in Richmond.

At the recent meeting of the Council of the Medical Society of Virginia, it was unanimously voted to accept the invitation of the Richmond Academy of Medicine to hold the sixty-third annual meeting of the Society in Richmond, in the Fall of 1932. In accepting the invitation, the Council made the recommendation that the members of the Society take care of themselves in the matter of entertainment.

Definite dates for this meeting will be announced shortly.

All-Day Clinic in Norfolk.

An all-day clinic will be held in Norfolk, March 30th, at St. Vincent's and the Protestant Hospitals, for doctors of the Second Congressional District.

Dr. J. L. Rawls is chairman of this Clinic and has arranged to have an especially interesting meeting that night, at which time Dr. Daniel L. Borden, Professor of Surgery, George Washington University School of Medicine, will deliver an address illustrated with lantern slides.

Surgeon-General Hugh S. Cumming,

Washington, D. C., has been re-appointed as Surgeon-General of the U. S. Public Health Service for another term of four years and the appointment has been confirmed by the Senate.

Medical College of Virginia News.

Dr. James S. McLester, professor of medicine, University of Alabama, will deliver the third annual Stuart McGuire Lecture of the Medical College of Virginia, Richmond, on the night of March 4th. Doctor McLester, a special investigator in the field of nutrition, will speak on "Nutrition in Its Newer Aspects."

Under an arrangement made with the Richmond public library its facilities have been placed at the disposal of the patients in the Memorial Hospital, one of the units of the Medical College of Virginia, Richmond. A member of the library staff visits the hospital on each Monday, to find out the books desired by patients.

Dr. Paul White, distinguished cardiologist of the Massachusetts General Hospital, Boston, was a visitor at the college this month and gave a clinic for third and fourth year medical students.

A survey of the library of the Medical College of Virginia, Richmond, shows that there are 14,850 bound volumes available, 3,000 pamphlets, and 360 periodicals regularly received. The facilities of this library are at the disposal of all members of the profession.

The number of visits to the outpatient department of the Medical College of Virginia, Richmond, for the month of January reached the top for that month and proved to be the next to largest record for any month in the history of the department. There were 4,518 patient visits made to the clinics in January and 1,406 laboratory examinations were given, another record number. As a result of this the number of prescriptions filled by the dispensing pharmacy reached the peak for any month, 1,630.

The General Education Board of New York recently made a grant to the Medical College of Virginia, Richmond, for the continuance of the St. Philip Hospital post-graduate clinic, for Negro practitioners, at the college this summer.

The Medical College of Virginia, Richmond, had an exhibit at the meeting of the Tri-State Medical Association, Greensboro, N. C., in February.

Dr. Clyde Frost, of the Julius Rosenwald Fund, Chicago, was a guest of the college recently. He spent some time inspecting the new St. Philip Hospital school of nursing dormitory and educational unit, toward the

construction of which the Rosenwald Fund contributed $40,000.

News from University of Virginia, Department of Medicine.

On January 25th, Dr. I. S. Ravdin, of the Department of Research Surgery of the University of Pennsylvania, addressed the faculty and student body on Studies in Gall-Bladder Physiology.

At the meeting of the University of Virginia Medical Society on February 8th, Dr. J. Edwin Wood spoke on Ephedrine in Adams-Stokes Syndrome.

On January 28th, Dr. J. H. Neff spoke before the Alleghany and Bath Counties Medical Society, meeting in Covington, on Some Findings in Children with Chronic Pyuria.

Dr. H. E. Jordan attended the meeting of the Annual Congress on Medical Education, Medical Licensure and Hospitals in Chicago, February 15th and 16th.

News Notes from the Duke University School of Medicine and Duke Hospital.

On February 13th, Dr. Fred H. Albee, of the Post-Graduate Medical School, New York City, lectured at the Duke Hospital on Fractures of the Hip-joint.

On February 24th, 25th and 26th the National Board examinations will be given to fifty of the Duke medical students.

New Members of Committee on Child Welfare.

Dr. I. C. Harrison, President, has appointed Drs. F. D. Wilson, Norfolk, and A. T. Finch, Chase City, as members of the Committee on Child Welfare of the Medical Society of Virginia, of which Dr. W. P. Jackson, Roanoke, is chairman. Other members of this Committee are: Dr. Thos. H. Daniel, Charlottesville; Dr. W. Ambrose McGee, Richmond; Dr. Lewis Holladay, Orange; and Dr. Charles E. Conrad, Harrisonburg.

The Southwestern Virginia Medical Society

Is to hold its semi-annual meeting in Bristol, Va., the latter part of March. Dr. George A. Wright, superintendent of the State Hospital at Marion, Va., is president, and Dr. A. M. Showalter, Christiansburg, is secretary-treasurer.

Conquering Diphtheria.

A county health officer of Maryland reported to his State department of health that not a single classmate of a child who attended school for a week while suffering from a mild unrecognized attack of diphtheria had shown, to the date of his report, any sign of the disease, though a mild case of diphtheria is known to be as contagious as a severe case. Practically all the children, however, had previously received immunization treatments, and the department of health in a recent bulletin expressed the opinion that the district had thus been saved from an old-fashioned epidemic of this dread disease.

Dr. I. Roy Wagner,

Former Virginian, now with the U. S. Veterans Bureau, has been transferred from Fort Lyon, Colo., to Memphis, Tenn., where he is medical officer in charge of the Veterans Hospital.

Joins Richmond Health Unit.

Dr. W. A. Browne, has accepted a position with the Richmond (Va.) Health Department as medical inspector of contagious diseases. The appointment was made possible by the cooperation of the Rockefeller Foundation, which will bear all the expense of his salary and has appropriated $5,000 to aid the city in a determined campaign to cut down the prevalence of scarlet fever which has shown a steady increase in incidence in the past three years.

Dr. Browne is a Canadian by birth, but a resident of Poughkeepsie, N. Y. He graduated in medicine from the University of Toronto, Canada, and later took the degree of doctor of Public Health from the Johns Hopkins School of Hygiene and Public Health.

Dr. George W. Crile,

Of Cleveland, Ohio, gave an address before the Jefferson Hospital, Roanoke, Va., the latter part of January on his autosynthetic cell and the practical application of the knowledge received by research work on this cell. There was a large attendance of doctors from that section of the State.

Civil Service Examinations.

The U. S. Civil Service Commission, Washington, D. C., announces open competitive examinations for: Senior Medical Officer. Medical Officer, and Associate Medical Officer, in cancer diagnosis and treatment. Applications for these positions should be on file with the

above named Commission not later than March 22, 1932.

Dr. C. Bernard Pritchett,

Recently of Danville, Va., moved to Newport News, Va., the first of the year. He has offices at 2801 Washington Ave., where he is specializing in the practice of Dermatology and Urology.

Dr. Paul D. White,

Of Harvard University Medical School, Boston, gave an address before the Richmond Academy of Medicine on February 9th, his subject being "The Treatment of Cardiovascular Disease."

New York Post-Graduate Medical School and Hospital Celebrates Anniversary.

The fiftieth anniversary of the founding of the New York Post-Graduate Medical School and Hospital was celebrated January 30th, at the Annual Dinner of the Faculty Association of that institution at the Hotel Biltmore, in the presence of 500 guests.

The speakers of the evening were Dr. George H. Meeker, Dean of the Graduate School of Medicine, University of Pennsylvania; Dr. Nicholas Murray Butler, President of Columbia University; and Dr. Ray Lyman Wilbur, U. S. Secretary of the Interior.

American College of Physicians to Award Prize to Dr. O. T. Avery.

The American College of Physicians recently selected Dr. O. T. Avery, of the Hospital of the Rockefeller Institute of New York City, as the recipient of the John Phillips Memorial Prize for 1932.

This prize, an annual award by the College in the sum of $1,500.00, is given to perpetuate in the College the memory of Dr. John Phillips, of Cleveland, a man of outstanding accomplishments as investigator, teacher and physician, for many years a member of the Board of Regents of the American College of Physicians, who gave his life in saving others on the occasion of the Cleveland Clinic disaster on May 15, 1929.

The Sixteenth Annual Clinical Session of the College will be held in San Francisco during the week of April 4, 1932. Dr. Avery will deliver an address, "The Role of Specific Carbohydrates in Pneumococcus Infection and Immunity," at the Convocation on Wednesday evening, April 6th. At the conclusion of Dr. Avery's address, the prize will be presented to him by Dr. S. Marx White, of Minneapolis, President of the College. The distinction of this award is enhanced by the fact that although it was available the previous year, it was not possible to decide on a suitable recipient. This is, therefore, the first award made.

Hospital for Young Mental Patients.

The Emma Pendleton Bradley Home, the first hospital for children under thirteen years of age who are suffering from nervous or mental diseases, was recently opened in East Providence, R. I., according to *The Modern Hospital.* The building and endowment were given by Mr. and Mrs. George Lothrop Bradley in memory of their daughter, for whom it is named. Its director is Dr. Arthur H. Ruggles, president of the American Foundation for Mental Hygiene. Patients from needy families of Rhode Island and cases of unusual interest for study will be given first consideration. In every case charges will be in accordance with what the patient can pay. The hospital will provide opportunities for the study of epilepsy, the after effects of sleeping sickness, birth injuries of the central nervous system, brain tumors, behavior problems needing special treatment, and various other nervous disorders.

Sectional Meeting of American College of Surgeons.

The Virginia, North Carolina and South Carolina Section of the American College of Surgeons met at Greensboro, N. C, January 28th and 29th. There were about 300 in attendance. The meetings began with early morning clinics, which were well attended, and there were clinical sessions from 11:30 to 2:30 each day. Thursday evening was given over to a talking medical movie and on Friday evening there was a rousing Community Health meeting. Hospital meetings and specialists' groups were held each forenoon and afternoon. The Virginia members voted unanimously to petition the College to group the three states permanently.

In addition to the American College officials, there were the following visitors: Dr. George W. Crile, Cleveland; Dr. Burton J. Lee, New York; Dr. Alfred W. Adson, Rochester, Minn.; Dr. John O. McReynolds, Dallas, Texas.

Charleston, S. C., was selected as the next place of meeting in January, 1933.

Officers elected for the three states are as follows:

Virginia—Dr. Clarence Porter Jones, Newport News, chairman; Dr. Joseph D. Collins, Portsmouth, secretary; Dr. Joseph T. Buxton, Newport News, counselor.

North Carolina—Dr. David T. Tayloe, Washington, chairman; Dr. B. C. Willis, Rocky Mount, secretary.

South Carolina—Dr. Jos. S. Rhame, Charleston, chairman; Dr. Robert E. Abell, Chester, secretary; Dr. W. H. Nardin, Anderson, counselor.

During the week, speakers appeared before schools, churches, clubs and civic leagues in Greensboro, besides broadcasting, over National hook-ups, public health advice such as periodic medical examinations, cancer prevention, eyesight saving, hospital needs, etc.

Committees of Academy of Medicine.

The Richmond (Va.) Academy of Medicine recently appointed the following committees for the calendar year: *Program*—Dr. Warren T. Vaughan, chairman, and Drs. D. M. Faulkner and H. H. Ware; *Censors*—Dr. Carrington Williams, chairman, and Drs. B. R. Tucker and Manfred Call.

Dr. B. S. Yancey,

Who has been practicing for the past few years at Chase City, Va., has located in Harrisonburg, Va., with offices in the National Bank Building. He will be engaged in general practice.

Posture Day.

On Saturday, January 30th, a Posture Day was held at Charlotte County Court House for the mothers, fathers and teachers of certain posture cases that had been discovered in a county-wide examination of something over eighteen hundred school children in Charlotte County. A large number of mothers, fathers and teachers were present and a great deal of interest was shown in the work. Of the eighteen hundred children examined, about 200 were found to have defects, and about twenty-five of these were brought by their parents to the meeting for further examination and advice. This seems a definite step toward preventive orthopedics.

The meeting was held in the High School Auditorium under the direction of Mr. R. W. Bobbitt, Division Superintendent, Charlotte County Public Schools. The work of Dr. Thomas Wheeldon, othopedic surgeon, and his assistant was greatly supplemented by a very instructive talk by Mr. Eliot V. Graves, of the Department of Health Education of the State Board of Education.

Dr. and Mrs. Charles A. Young,

Roanoke, Va., sailed February 3rd, on the *Aquitania*, for a thirty-day Mediterranean Cruise.

Dr. J. Allison Hodges,

Richmond, Va., by invitation addressed the Danville (Va.) Woman's Club, the latter part of January. He spoke on Mental Hygiene in the Family.

The "Other" Case of Tuberculosis.

"Tuberculosis has so far been habitually considered to be a manifestation of social misery, and it has been hoped that an improvement in the latter would reduce the disease." These words were spoken by Robert Koch on that memorable March 24, 1882—exactly fifty years ago—when he announced before the Berlin Pathological Society the discovery of the tubercle bacillus. Fifty years!—and still we reap in this country an annual toll of some 90,000 deaths from tuberculosis.

Of course, obvious "consumptives" are not so commonly seen as formerly. Today it is the hidden, undiscovered bacillus disseminator, who is the chief menace to our youth. Grandmother's "chronic bronchitis," father's "stomach cough," often prove when investigated by the X-ray, to be the bed of tuberculous embers from which new fires are being lighted; fires which will break out into flame when the strain of young adulthood begins to make its demands. Koch's discovery led to the establishment of public health machinery designed to find every case of tuberculosis, and yet it is known that at least one-half of all cases with active tuberculosis in this country are not being "controlled," either by isolation in a sanatorium, education of the family by the public health nurse, or adequate instruction by the private physician. It is not enough to make a diagnosis in an individual; it is our obligation to inquire persistently where this individual got his disease and to whom he has already given it. Moreover, cases must be deliberately searched out. Every clue must be relentlessly followed if we are to make good Koch's promise to mankind, that the White Plague could and would be conquered.

A concerted effort to "find the other case"

will be made throughout the month of April, 1932, by means of a nation-wide educational campaign to be conducted by the 2,084 affiliated tuberculosis associations of the United States in what will be the fifth annual Early Diagnosis Campaign. During this time closer cooperation will be sought among doctors, health officers, public health nurses, and social workers, and anyone who suspects he may have the disease will be urged to go to his family doctor for a thorough examination, or to persuade anyone in his family who shows any of the "danger signs" to do the same.

H. E. Kleinschmidt, M. D., *Director, Health Education, National Tuberculosis Association.*

Aubrey H. Straus,

Richmond, Va., consulting bacteriologist, has returned to his laboratory after a trip to France. While there, he on several occasions, visited the Pasteur Institute in Paris.

Dr. Calvin T. Burton,

For the past two years resident surgeon in ophthalmology, rhinology, and otolaryngology at the University of Virginia Hospital, has located in Roanoke, Va., where he is associated with Dr. H. B. Stone in the practice of the above named specialties. Dr. Burton graduated from the University of Virginia in 1928 and had intern service at the University Hospital and in New York.

Trends in Mental Disease in New York State.

In spite of the general improvement in the physical health of the population of New York, the new cases entering the hospitals for mental disease are annually increasing, and the rate of increase is higher than that of the general population. In the fiscal year of 1931, the average daily patient population of these institutions in New York during the year was about 54,000. The rate of new cases per 100,000 of population in 1931 was seventy-seven as compared with seventy in 1920 and sixty-five in 1910.

The great extension of the use of automobiles has caused a significant increase in the number of mental diseases due to accidents and striking increases have occurred in recent years in the new cases of mental disease due to hardening of the arteries. Syphilitic mental diseases also constitute a serious problem. The trend in alcoholic mental disease has been very irregular during the past twenty years, while mental diseases due to drugs are comparatively few and are not increasing.

American Board of Obstetrics and Gynecology.

The next written examination of the Board will be held in nineteen different cities of the United States and Canada at 2 P. M., on Saturday, March 26, 1932. The general, oral and clinical, examination will be held in New Orleans on Tuesday, May 10, 1932, immediately preceding the meeting of the American Medical Association. Reduced railroad fares will be available.

For detailed information and application blanks apply to the Secretary, Dr. Paul Titus, 1015 Highland Building, Pittsburgh, Penna.

An Opportunity to Earn $15,000.

Mead Johnson & Company announces an award of $15,000 to be given to the investigator or group of investigators producing the most conclusive research on the vitamin A requirements of human beings.

Candidates for the award must be physicians or biochemists, residents of the United States or Canada who are not in the employ of any commercial house. Manuscripts must be accepted for publication before December 31, 1934, by a recognized scientific journal. Investigations shall be essentially clinical in nature, although animal experimentation may be employed secondarily.

For other details of the Vitamin A Clinical Research Award, apply to Mead Johnson & Company, Evansville, Ind.

Dr. J. McCaw Tompkins

Was elected president of the Westmoreland Club, Richmond, Va., at the annual meeting held the middle of February.

Dr. Otto F. Geck,

Formerly of Petersburg, Va., but for the past three years of New York, announces the opening of his office for the practice of Neurology and Psychiatry at the Neurological Institute of New York, 706 West 168th Street, New York City.

Dr. and Mrs. Charles W. Scott,

Of Port Republic, Va., are spending their vacation in Orlando, Florida. They also expected to visit Miami and Palm Beach before returning home early in March.

Dr. W. Gayle Crutchfield,

Lexington, Ky., has been appointed assistant neurological surgeon in the Hospital Divi-

sion of the Medical College of Virginia. Dr. Crutchfield is a graduate of Johns Hopkins University and, after an internship in the Woman's Hospital, Baltimore, and at Peter Bent Brigham Hospital, Boston, took further post-graduate work in Vienna.

Dr. Cushing to Retire from Teaching.

It has been announced that Dr. Harvey Cushing, Moseley professor of Surgery at Harvard University School of Medicine, will retire September 1st, after having filled this position for twenty-one years. He will be succeeded by Dr. Elliott C. Cutler, at present professor of surgery at the Western Reserve University School of Medicine, Cleveland, Ohio.

Married.

Dr. Benjamin A. Rice, Forest, Va., and Miss Katherine Elliott, Alpine, Texas, on January 20th. Before her marriage, Mrs. Rice spent six and a half years in Madrid, Spain, in the office of the American commercial attache. For the past two years she has been assistant trade commissioner under the Bureau of Foreign and Domestic Commerce.

Dr. Percy Gatling Hamlin, Philadelphia, Pa., and Miss Elizabeth Beverly Scott, Harrisburg, Pa., February 6th, in Williamsburg, Va. Dr. Hamlin is an alumnus of the Medical College of Virginia in the class of '16.

Dr. Edward Holloway Williams and Miss Margaret Lane Barlow, both of Richmond, Va., February 6th. Dr. Holloway is a member of the class of '30, Medical College of Virginia and is now connected with the staff of Westbrook Sanatorium.

Lieutenant Commander Toson O. Summers, formerly of Richmond, Va., now with the medical corps of the U. S. Navy and stationed at the Brooklyn, N. Y., Naval Hospital, and Miss Cynthia Peacock, of "Burleigh," Derby, England, on February 16th, in London.

Dr. Eugene Anthony Bain and Miss Edna Mary Pittaluga, both of New York, recently. Dr. Bain is a native of Petersburg, Va., and graduated from the University of Virginia, Department of Medicine, in 1927.

Dr. Wesley O. Brandon, Yadkinville, N. C., of the class of '28, Medical College of Virginia, and Miss Kathleen Cooley Craver, at Hillsville, Va., December 13th.

Dr. Martin A. Hatcher, Hamlet, N. C., an alumnus of the Medical College of Virginia, and Miss Nora Langston, Laurens, S. C., December 26th.

Community Hospital, Hopewell, Va.

The doctors of Hopewell, Va., composing the medical staff of the Community Hospital, in that place, in February, elected Dr. F. Musgrave Howell as president for the ensuing year. Other officers elected at this time were: Vice-president, Dr. Oliver L. Jones, and secretary-treasurer, Dr. W. W. Cleere. Dr. W. M. Phipps was elected to the board to fill the vacancy of the outgoing member, Dr. J. C. Bodow.

The Tri-State Medical Association of the Carolinas and Virginia

Had a most excellent meeting in Raleigh, N. C., the middle of February with an attendance of about 250. The president, Dr. Beverley R. Tucker, of Richmond, Va., presided. Greenville, S, C., was selected as the place of meeting for 1933 and the following officers were elected: President, Dr. Clarence A. Shore, Director of the State Laboratory of Hygiene, Raleigh, N. C.; vice-presidents, Dr. James W. Hunter, Norfolk, Va.; Dr. N. C. Daniel, Oxford, N. C.; and Dr. A. E. Baker, Charleston, S. C. Dr. J. M. Northington, Charlotte, N. C., was re-elected secretary.

Dr. S. A. Tuck,

Recently of Eggleston, Va., has located at Pembroke, Va., where he will continue the practice of his profession.

Dr. Francis B. Teague,

Recently connected with the McClung Hospital, Richwood, W. Va., has located in Martinsville, Va., for the practice of medicine and surgery. He graduated from the University of Maryland, Baltimore, in 1927, following which he spent a year at the University Hospital, that city, and two years at Jefferson Hospital, Roanoke, Va., before locating at Richwood.

Dr. James E. Wheeler,

University, Va., has been appointed a first lieutenant in the Medical Reserve Corps, U. S. Army, in the capacity of Surgical Ward Officer to the 41st General Hospital.

Annex to Grace Hospital Opened.

The annex to Grace Hospital, Richmond, Va., was formally opened for inspection by the public on February 2nd. The annex is five stories in height and modern in every detail. It increases the capacity of the hospital

from fifty-five to one hundred and five beds. The fourth floor is given over to the operating suite and the addition also allows for expansion of the former laboratory and X-ray departments. An emergency receiving room is on the first floor. The hospital was opened originally in March, 1912, and was bought by the present owners on July 1, 1929.

Dr. D. O. Hamblin,

Recently of Lynchburg, Va., has moved to Pennington Gap, Va., where he is affiliated with the Lee General Hospital. Dr. Hamblin graduated from the University of Virginia in 1929, and was connected with the University Hospital until he moved to Lynchburg in the early Fall.

Hourly Nursing Service.

The Private Duty Nurses Club of Richmond, Va., announces the inauguration of an Hourly Nursing Service, in which its members are subject to call for service in all branches of the work that can be adequately performed in the home, at the following rates: $1.50 for first hour or less, and 50 cents for each additional hour or fraction thereof.

The Club realizes that due to the present economic situation there is a pressing need for a service of this kind in Richmond, which has heretofore been furnished only by the I. V. N. A. The adoption of a similar movement will render a distinct service to the people who do not care for or cannot afford a full time nurse. It will also help to solve the unemployment situation among the members of the Private Duty Nurses Club.

For information, dial 3-1656. (*Adv.*)

Obituary Record

Dr. Reginald R. Walker,

Prominent laryngologist of Washington, D. C., died January 15th of typhoid. He was fifty-four years of age and a graduate of the Georgetown University School of Medicine in 1900. Dr. Walker had been a member of the Medical Society of Virginia for about twenty years. He served in the medical forces during the World War.

Dr. Nathan Peabody Tyler

Died at the home of his daughter in Norfolk, Va., January 20th. He was eighty-four years of age and graduated from the Yale University School of Medicine, New Haven, Conn., in 1879. Dr. Tyler was prominent in the medical profession of New Rochelle, N. Y., and New Haven, Conn., prior to retirement. A son and daughter survive him.

Resolutions on Death of Dr. James.

At a meeting of the Richmond Academy of Medicine, held on January 26, 1932, the following resolutions were unanimously adopted:

Whereas: It has pleased an all-wise Providence to removed from our midst Dr. Lorrimer F. James, who passed to his reward on December 28, 1931, after an illness of two months Be it, therefore,

Resolved: That in the death of Dr. James, the Richmond Academy of Medicine has lost a valuable member and the community and State have lost a substantial and loyal citizen. Dr. James upheld the best traditions of his profession, which was abundantly manifested in the keen interest he took in his patients, earnestly endeavoring at all times to give them the benefit of the best skilful care available. While his well-rounded general knowledge of medicine amply equipped him for his work as a general practitioner, he was at all times acutely conscious of his limitations, and never failed to give his patients the benefit of consultants.

His high character, profound interest in his work, and his broad religious qualities endeared him to a large circle of friends. It could truly be said that the poorest patients profited equally from his friendly interest and scientific consideration with his wealthiest ones. An earnest God-fearing physician and friend of the poor has passed on to his reward. Be it further

Resolved: That these resolutions be spread upon the minutes of this organization, that a copy be sent to the bereaved family, and that they be published in the Virginia Medical Monthly.

Mark W. Peyser,
Secretary-Treasurer.

In the death of Dr. Lorrimer F. James, the Retreat for the Sick, a large number of people in and around the city of Richmond, as well as several sections of the State of Virginia, have sustained the loss of a friend and humanitarian. He practiced his profession successively and successfully for a number of years in Gloucester County, the counties of the Eastern Shore and the city of Hopewell, before locating in Richmond.

That he endeared himself to the people of the various communities served by him has been proven by the demonstrations of affection that have followed him. He was untiring in his devotion to his work, always alert to acquire additional knowledge and skill.

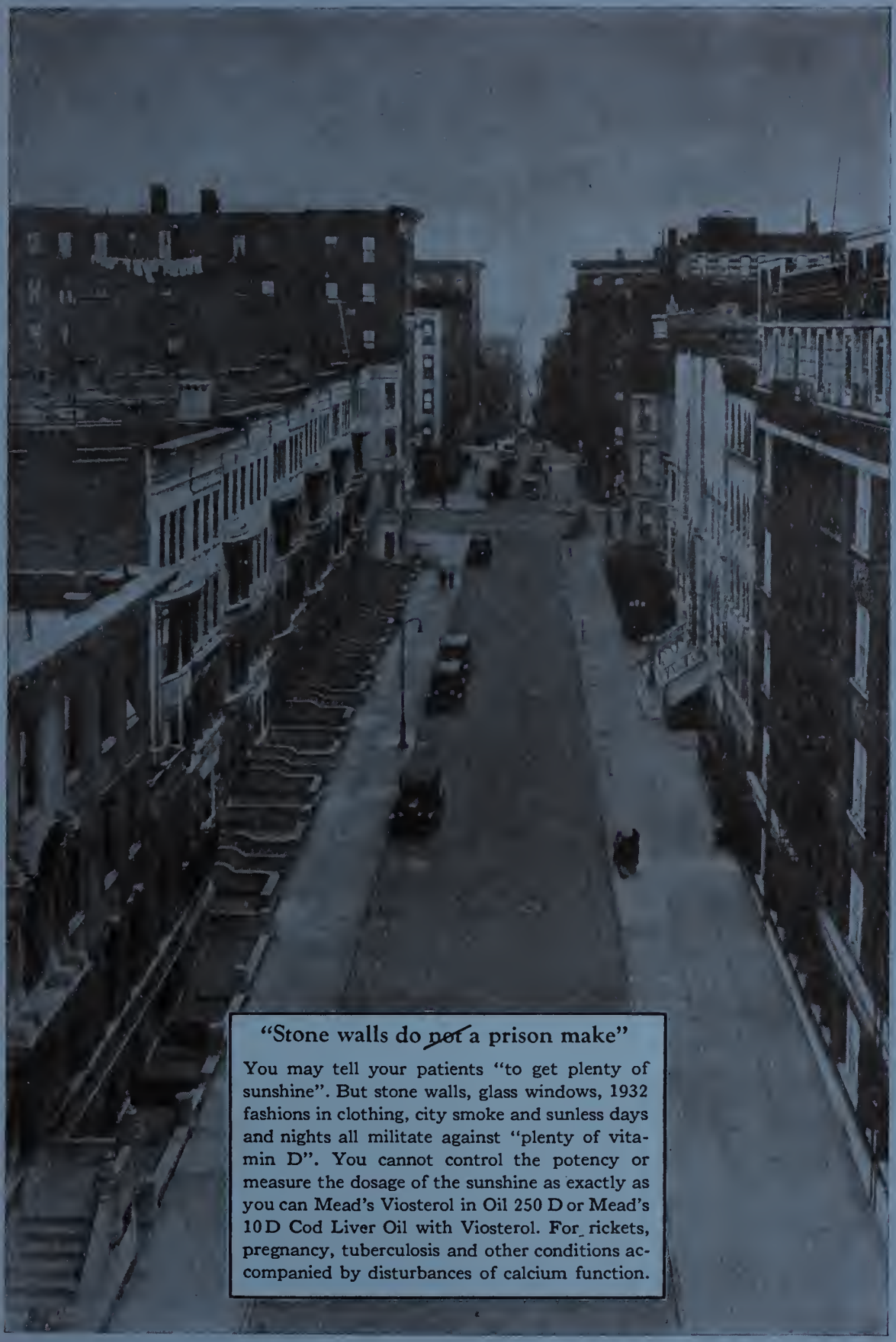
As a practitioner of medicine, he was conscientious and sympathetic, enjoying the confidence and esteem of a large clientele, ministering to its needs promptly at all times; and, so,

Whereas, It has pleased an all-wise Providence to remove from our midst our friend and co-worker, therefore be it

Resolved by the Medical and Surgical Staff of the Retreat for the Sick, that we tender our heartfelt sympathy to the bereaved family; and be it further

Resolved, that a copy of this preamble and these resolutions be transmitted to the family, that they be spread upon the minutes of this body as a record of the Hospital and that they be published in the Virginia Medical Monthly.

J. W. Henson,
Howard Urbach,
Wm. Russell Jones.



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